N00158.AR.000025
NAS WILLOW GROVE
5090.3a

RESULTS OF ANALYSIS OF 27 SOIL SAMPLES, FOUR SOURCE WATER SAMPLES AND THREE RINSATE BLANKS COLLECTED AT WILLOW GROVE BETWEEN 1 AND 4 MAY 1989

Prepared for:

Northern Division
Naval Facilities Engineering Command

Prepared by:

EA Laboratories

August 1989
Rept. #890292

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1. ANALYTICAL SUMMARY

ANALYTICAL SUMMARY

Between 1 and 4 May 1989 EA Engineering, Science, and Technology, Inc. personnel collected 27 soil samples, four source water samples and three rinsate blanks at the Naval Air Station at Willow Grove. The samples were taken to EA Laboratories in Sparks, Maryland for analysis. Upon receipt at the laboratory the samples were inspected, compared with the chain-of-custody records, logged, assigned laboratory accession number and distributed for analysis.

Results are summarized in the appended data package. Sample Duplicate Matrix Spike (EA #8902103) was cancelled on 8 May 1989. The volatile organic analysis originally assigned to the sample were then assigned to sample Duplicate 9SL #1 (EA #8902104) since it is the same sample as Duplicate Matrix Spike. Analytical concerns are discussed in the Quality Assurance Summary included at the end of each section.

Analytical control limits specified in the Plan of Action for Site Inspection NAS Willow Grove, Pennsylvania (Feb. 1988) were not met. The cyanide analysis for samples NSLB-5 Composite, NSLB-6 Composite and Duplicate 9SL #1 (EA numbers 8902095, 8902097 and 8902104, respectively) exceeded holding times and the 50% analytical control limit.

Samples NSLB-1 Composite, NSLB-2 Composite, NSLB-3 Composite, NSLB-4 Composite, NSLB-5 Composite, NSLB-6 Composite and Duplicate 9SL #1 (EA numbers 8902087, 8902089, 8902091, 8902093, 8902095, 8902097 and 2102, respectively) were analyzed for pesticides and polychlorinated biphenyls (PCB's) outside of holding times. The analyses were within the 50% control limit.

All supporting data will be held in storage at EA Laboratories for three years.

In accepting analytical work, EA Laboratories, a division of EA Engineering, Science, and Technology, Inc., warrants the test results to be of precision normal for the sample type and methodology employed for each sample as submitted. The methods indicated were employed as stated to the extent permitted by sample and/or matrix limitation, if any. EA disclaims any other warranties, express or implied, including warranty of fitness for a particular purpose and warranty of merchantability. Also, EA accepts no legal responsibility for the purpose for which the client uses test results. EA cannot accept any terms and conditions or purchase orders, work orders, or requests, and any analytical work performed by EA must be governed by the terms and conditions set forth herein.

2. CHAIN OF CUSTODY RECORDS

Chain of Custody Record

EA Laboratories
15 Loveton Circle
Sparks, MD 21152
301-771-4950

2214

Company Name	Project Manager or Contact
EA	Chuck Houlik

Project No.	Project Name
6388.03	Willow Grove

Special QA Protocols (Circle)
EPA-CLP TIER I (NJ) OTHER (SPECIFY)
USATHAMA TIER II (NJ) Navy Level C

Date	Time	Grab	Comp	Sample Identification (I.D. and Matrix)	No. of Containers	Volatile OSP	Semi-Volatile	Pest. PCB	TOC	TPH	Cyanide	Metals				EA Labs Accession Number	Remarks
5/1/89	1320	X		NSLB-1, S-2, Soil	2	X										2086	Take Matrix Spike Sam
5/1/89	1346		X	NSLB-1, Composite	1		X	X	X	X	X	X				2087	Matrix Spike Duplicate
5/1/89	1430	X		NSLB-2, S-1, Soil	1	X										2088	
5/1/89	1441		X	NSLB-2, Composite	1		X	X	X	X	X	X				2089	
5/1/89	1617	X		NSLB-3, S-3, Soil	1	X										2090	
5/1/89	1623		X	NSLB-3, Composite	1		X	X	X	X	X	X				2091	
5/2/89	1221	X		NSLB-4, S-4, Soil	1	X										2092	
5/2/89	1224		X	NSLB-4, Composite	1		X	X	X	X	X	X				2093	
5/2/89	1323	X		NSLB-5, S-3, Soil	1	X										2094	
5/2/89	1343		X	NSLB-5, Composite	1		X	X	X	X	X	X				2095	
5/2/89	1420	X		NSLB-6, S-2, Soil	1	X										2096	
5/2/89	1422		X	NSLB-6, Composite	1		X	X	X	X	X	X				2097	
5/1/89	1634	X		Rinsate #1 9SL, Water	8	X	X	X	X	X	X	X				2098	
5/2/89	1440	X		Rinsate #2 9SL, " "	8	X	X	X	X	X	X	X				2099	
5/2/89	-	X		Trip Blank	1	X										2100	
5/2/89	1630	X		Source Water 9SL-1	1	X										2101	

Sampled by: (Signature)	Title:	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Gregg T. Campbell	Geologist II	5/2/89 1807	Gregg T. Campbell	5/3/89 0921	

Relinquished by: (Signature)	Date/Time	Recieved by: (Signature)	Relinquished by: (Signature)	Date/Time	Rec'd. by Lab: (Signature)
				5/3/89 10:00	Mary E Cooper

Sample Custody Notes: Samples iced. d. 24 May 89 [illegible]

Sample Shipped by: (Circle) Fed. Ex. Pu/o. UPS
Other (Specify) Hand carried

Air Bill Number:

EA 0396 6/3/88 White - EA Sample Custody

Chain of Custody Record

EA Laboratories
15 Loveton Circle
Sparks, MD 21152
301-771-4950

2R1A

Company Name: EA

Project Manager or Contact: Chuck Houlik

Project No.: 10388.03

Project Name: Willow Grove

Special QA Protocols (Circle): EPA-CLP | TIER I (NJ) | OTHER (SPECIFY) Navy Level C | USATHAMA | TIER II (NJ)

Date	Time	Grab	Comp	Sample Identification (I.D. and Matrix)	No. of Containers	Volatile OPC	Semi-Volatile	Pest/PCB	Total Metals	PCC	PH	Cyanide				EA Labs Accession Number	Remarks
5/2/89	1323	X		Duplicate, 95L #1	2	X	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~				2102	For Duplicate, 95L #1
5/2/89	1343		X	Duplicate Matrix Spike	1	X	X									2103	1 jar is just for VOA
5/2/89	1343		X	Duplicate, 95L #1	1	X	X	X	X	X	X	X				2104	2 jar is for all other analy-
5/2/89	1610	X		FTAB-1, S-2, Soil	1	X				X	X					2105	ses, VOA jar is labeled
5/2/89	1635		X	FTAB-1, Composite	1		X	X	X	X	X	X				2106	as such
5/2/89	1715	X		FTAB-2, S-3, Soil	1	X				X	X					2107	all parameters should be cancelled RSB
5/2/89	1730		X	FTAB-2, Composite	1		X	X	X	X	X	X				2108	cancelled 8 May 89

2103 cancelled as per C. Houlik 8 May 89 (2104 is the same as 2103) RSB

Sampled by: (Signature)	Title:	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Gregg T. Campbell	Geologist II	5/2/89 1807	Gregg T. Campbell	5/3/89 0921	

Relinquished by: (Signature)	Date/Time	Recieved by: (Signature)	Relinquished by: (Signature)	Date/Time	Rec'd. by Lab: (Signature)
				5/3/89 1000	Mary E Cape

Sample Custody Notes: Samples iced
X analysis added 5/8/89
d. 24 May 89
8904942

Sample Shipped by: (Circle) Fed. Ex. | Purol. | UPS
Other (Specify): Hand carried.

Air Bill Number:

EA 0396 6/3/88 White - EA Sample Custody

2001

359

Chain of Custody Record

EA Laboratories
15 Loveton Circle
Sparks, MD 21152
301-771-4950

2R1A

Company Name: EA MD.

Project Manager or Contact: CH.

Project No.: 10388.03

Project Name: NAS Willow Grove

Special QA Protocols (Circle): EPA-CLP, USATHAMA, TIER I (NJ), TIER II (NJ), OTHER (SPECIFY): Navy Level C

Parameters for Analysis

Date 89	Time	Grab	Comp	Sample Identification (I.D. and Matrix)	No. of Containers	Volatile Organics	Semi Volatiles (BNA's)	Pest/PCB	TOC	TPH	Metals	Cyanide				EA Labs Accession Number	Remarks
5/3	0905	X		FTAB-3 S-1 Soil	1	X			X	X						2150	Use Trip Blank with
5/3	0925		X	FTAB-3 Composite	1		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~				2151	no air bubble
5/3	0956	X		FTAB-4 S-2 Soil	1	X			X	X						2152	all parameters should be analyzed
5/3	1005		X	FTAB-4 Composite	1		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~				~~2153~~	8 May 89 as per Hewlett.
5/3	1200	X		BLD 390 B-1 S-3	1	X										2154	
5/3	1210		X	BLD 390 B-1 Composite	1		X	[redacted]	X	X	[redacted]	[redacted]			-	2155	Keep in QA RSB
5/3	1315	X		BLD 390 B-2 S-1	1	X										2156	~~all parameters should be analyzed~~ RSB
5/3	1325		X	BLD 390 B-2 Composite	1		X	[redacted]	X	X	[redacted]	[redacted]			-	2157	
5/3	1018	X		Rinsate-1 FTA H_2O	8	X	X	~~X~~	X	X	~~X~~	~~X~~			-	2158	Metals Pest/PCB's & CN should be analyzed
5/3-5/4	—	X		Trip Blank	2	X										2159	8 May 89 as per C. Hewlett.
5/3	1500	X		Source Water NSLW-2	2	X										2160	

TOC & TPH added to 2150 and 2152 8 May 89.

Sampled by: (Signature)	Title:	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Matthew McDonnell	Geologist	5/3/89 1730	Matthew McDonnell	5/3/89 1600	

Relinquished by: (Signature)	Date/Time	Recieved by: (Signature)	Relinquished by: (Signature)	Date/Time	Rec'd. by Lab: (Signature)
				04/May/89 14:09	Bob Entz

Sample Custody Notes: Notify Greg Cambell when samples arrive!! 890292 d. 25 May 89

Sample Shipped by: (Circle) Fed. Ex. Puro. UPS Other (Specify)

Air Bill Number:

2004

2

365

Chain of Custody Record

EA Laboratories
15 Loveton Circle
Sparks, MD 21152
301-771-4950

Company Name: EA Eng.

Project Manager or Contact: Chuck Houlik

Project No.: 10388.03

Project Name: Willow Grove

Special QA Protocols (Circle): EPA-CLP, TIER I (NJ), OTHER (SPECIFY) NAVY Level C; USATHAMA, TIER II (NJ)

Date	Time	Grab	Comp	Sample Identification (I.D. and Matrix)	No. of Containers	VOC										EA Labs Accession Number	Remarks
5/4/89	1445	X		Source Water NSLW-3	2	X										2205	
5/5/89	1020	X		Source Water NSLW-4	2	X										2206	
5/4/89	1500	X		Trip Blank	1	X										2207	

Sampled by: (Signature)	Title:	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Thomas Porto	Geologist II	5/5/89 1020	Thomas Porto	5/5/89 1400	

Relinquished by: (Signature)	Date/Time	Recieved by: (Signature)	Relinquished by: (Signature)	Date/Time	Rec'd. by Lab: (Signature)
				5/8/89 2:35	Mary E Cooper

Sample Custody Notes: 890292 ~~890203~~ d. 29 May 89

Sample Shipped by: (Circle) Fed. Ex. Puro. UPS

Other (Specify)

Air Bill Number:

N

80

EA 0396 6/3/88 White — EA Sample Custody Yellow — EA Lab Manager Pink — Project Manager

3. VOLATILES DATA

A. QC Summary

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
1	RINSE#1	97	110	114		0
2	RINSE#2	91	98	113		0
3	TRIP BL	93	96	110		0
4	SCE9SL1	100	99	107		0
5	(Source water)					
6						
7						
8						
9						
10						
11						
12						
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30						

	QC LIMITS
S1 (TOL) = Toluene-d8	(88-110)
S2 (BFB) = Bromofluorobenzene	(86-115)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

L v l:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
1	VBLK1	101	110	100		0
2	NSLB1S2	99	107	104		0
3	NSLB2S1	105	101	104		0
4	NSLB3S3 RE	106	109	106		0
5	VBLK2	98	105	102		0
6	NSLB4S4	98	103	105		0
7	NSLB5S3	108	112	110		0
8	NSLB6S2	94	98	115		0
9	VBLK3	99	101	103		0
10	DUP9SL1	100	100	100		0
11	DUP	102	100	99		0
12	DUP MS	102	99	101		0
13	DUP MSD	99	100	103		0
(1-5) 14	FTAB1S2 ~~RE~~ DL	102	105	98		0
15	FTAB2S3	95	92	99		0
16	VBLK4	102	100	103		0
(1-25) 17	FTAB1S2 DL	101	106	102		0
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						

	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogat s diluted out

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Level:(low/med) LOW

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
1	VBLK1	99	101	103		0
2	FTAB3S1	97	96	103		0
3	FTAB4S2	103	99	101		0
4	B2S1	96	92	101		0
(1-5) 5	B1S3 DLRE	87	100	99		0
6	VBLK2	102	100	103		0
(1-20) 7	B1S3 DL	102	99	102		0
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30						

	QC LIMITS
S1 (TOL) = Toluene-d8	(81-117)
S2 (BFB) = Bromofluorobenzene	(74-121)
S3 (DCE) = 1,2-Dichloroethane-d4	(70-121)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates dilut d out

2A
WATER VOLATILE SURROGATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DCE)#	OTHER	TOT OUT
1	RINSE1	97	99	101		0
2	TRIP BL	99	100	103		0
3	NSLW2	101	103	102		0
4	NSLW3	100	101	100		0
5	NSLW3MS	101	101	98		0
6	NSLW3MSD	104	102	96		0
7	NSLW4	102	101	99		0
8	TRIP BL	104	101	100		0
9						
10						
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28						
29						
30						

	QC LIMITS
S1 (TOL) = Toluene-d8	(88-110)
S2 (BFB) = Bromofluorobenzene	(86-115)
S3 (DCE) = 1,2-Dichloroethane-d4	(76-114)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates dilut d out

3A

WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix Spike - EPA Sample No.: NSLW3
(EA#2205)

COMPOUND	SPIKE ADDED (UG/L)	SAMPLE CONCENTRATION (UG/L)	MS CONCENTRATION (UG/L)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	50.	0.	55.	110	61-145
Trichloroethene	50.	0.	57.	113	71-120
Benzene	50.	0.	55.	109	76-127
Toluene	50.	0.	55.	110	76-125
Chlorobenzene	50.	0.	56.	112	75-130

COMPOUND	SPIKE ADDED (UG/L)	MSD CONCENTRATION (UG/L)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	50.	56.	111	1	14	61-145
Trichloroethene	50.	55.	111	2	14	71-120
Benzene	50.	56.	111	2	11	76-127
Toluene	50.	55.	111	1	13	76-125
Chlorobenzene	50.	56.	111	1	13	75-130

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

3B

SOIL VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Nam : EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix Spike - EPA Sample No.: DUP MS/MSD Level:(low/med) LOW
EA#2104

COMPOUND	SPIKE ADDED (UG/KG)	SAMPLE CONCENTRATION (UG/KG)	MS CONCENTRATION (UG/KG)	MS % REC #	QC LIMITS REC.
1,1-Dichloroethene	61.	0.	76.	124	59-172
Trichloroethene	61.	0.	69.	113	62-137
Benz ne	61.	0.	71.	116	66-142
Toluene	61.	0.	70.	114	59-139
Chlorobenzene	61.	0.	71.	115	60-133

COMPOUND	SPIKE ADDED (UG/KG)	MSD CONCENTRATION (UG/KG)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
1,1-Dichloroethene	61.	74.	120	3	22	59-172
Trichloroethene	61.	66.	108	4	24	62-137
Benzene	61.	70.	113	3	21	66-142
Toluen	61.	67.	109	5	21	59-139
Chlorob nzene	61.	69.	112	3	21	60-133

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 5 outside limits
Spike Recovery: 0 out of 10 outside limits

COMMENTS:

FORM III VOA-2 1/87 Rev.

4A
VOLATILE METHOD BLANK SUMMARY

Lab Nam : EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID: EF485 Lab Sample ID:

Date Analyzed: 5/ 6/89 Time Analyzed: 8:45

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 7002E5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	NSLB1S2	EA# 2086	EF493	14:47
2	NSLB2S1	EA# 2088	EF494	15:32
3	NSLB3S3 DL	EA# 2090	EF495	16:18
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COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID: EF502 Lab Sample ID:

Date Analyzed: 5/ 8/89 Time Analyzed: 9:31

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 7002E5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	NSLB4S4	EA# 2092	EF503	10:21
2	NSLB5S3	EA# 2094	EF504	11:07
3	NSLB6S2	EA# 2096	EF505	11:53
4	RINSE#1	EA# 2098	EF506	12:39
5	RINSE#2	EA# 2099	EF507	13:25
6	TRIP BL	EA# 2100	EF508	14:12
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COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID: EF519 Lab Sample ID:

Date Analyzed: 5/ 9/89 Time Analyzed: 14:15

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 7002E5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	SCE9SL1	EA # 2101	EF520	15:01
2	DUP9SL1	EA # 2102	EF521	15:42
3	DUP	EA # 2103	EF522	16:22
4	DUP MS	EA # 2103	EF523	17:03
5	DUP MSD	EA # 2103	EF524	17:43
6	FTAB1S2 DL	EA # 2105	EF525	18:24
7	FTAB2S3	EA # 2107	EF526	19:05
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COMMENTS:

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4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID: EF544 Lab Sample ID:

Date Analyzed: 5/11/89 Time Analyzed: 9:11

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 7002E5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	FTAB1S2 DL	ER# 2105	EF545	9:59
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COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Lab File ID: EF519 Lab Sample ID: METHOD BLANK

Date Analyzed: 5/ 9/89 Time Analyzed: 14:15

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 7002E5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	FTAB3S1	EA # 2150	EF527	19:45
2	FTAB4S2	EA # 2152	EF528	20:25
3	B2S1	EA # 2156	EF530	21:46
4	B1S3 DL	EA # 2154	EF531	22:26
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COMMENTS:

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Lab File ID: EF544 Lab Sample ID: METHOD BLANK

Date Analyzed: 5/11/89 Time Analyzed: 9:11

Matrix: (soil/water) SOIL Level:(low/med) LOW

Instrument ID: 7002E5

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
1	B1S3 DL	EA# 2154	EF546	10:46
2	RINSE1	EA# 2158	EF547	11:52
3	TRIP BL	EA# 2159	EF548	12:58
4	NSLW2	EA# 2160	EF549	14:04
5	NSLW3	EA# 2205	EF550	15:10
6	NSLW3MS	EA# 2205	EF551	16:16
7	NSLW3MSD	EA# 2205	EF552	17:22
8	NSLW4	EA# 2206	EF553	18:28
9	TRIP BL	EA# 2207	EF554	19:34
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COMMENTS:

5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID: EF374 BFB Injection Date: 4/21/89

Instrument ID.: 7002E5 BFB Injection Time: 12:30

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.3
75	30.0 - 60.0% of mass 95	53.2
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.7
173	Less than 2.0% of mass 174	.0 (.0)1
174	Greater than 50.0% of mass 95	82.2
175	5.0 - 9.0% of mass 174	6.9 (8.4)1
176	Greater than 95.0%, but less than 101.0% of mass 174	81.8 (99.4)1
177	5.0 - 9.0% of mass 176	6.1 (7.5)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD20	20 PPB	EF375	4/21/89	13:42
2	VSTD50	50 PPB	EF376	4/21/89	14:27
3	VSTD100	100 PPB	EF377	4/21/89	15:13
4	VSTD150	150 PPB	EF378	4/21/89	15:58
5	VSTD200	200 PPB	EF379	4/21/89	16:43
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5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID: EF483 BFB Injection Date: 5/ 6/89

Instrument ID.: 7002E5 BFB Injection Time: 7:13

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.1
75	30.0 - 60.0% of mass 95	56.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.1
173	Less than 2.0% of mass 174	.0 (.0)1
174	Greater than 50.0% of mass 95	81.2
175	5.0 - 9.0% of mass 174	6.3 (7.8)1
176	Greater than 95.0%, but less than 101.0% of mass 174	79.0 (97.2)1
177	5.0 - 9.0% of mass 176	5.8 (7.4)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD50	50 PPB	EF484	5/ 6/89	7:41
2	VBLK1	METHOD BLANK	EF485	5/ 6/89	8:45
3	NSLB1S2	EA # 2086	EF493	5/ 6/89	14:47
4	NSLB2S1	EA # 2088	EF494	5/ 6/89	15:32
5	NSLB3S3 DL	EA # 2090	EF495	5/ 6/89	16:18
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5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID: EF499 BFB Injection Date: 5/ 8/89

Instrument ID.: 7002E5 BFB Injection Time: 6:43

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.1
75	30.0 - 60.0% of mass 95	56.3
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.2
173	Less than 2.0% of mass 174	.0 (.0)1
174	Greater than 50.0% of mass 95	84.3
175	5.0 - 9.0% of mass 174	7.2 (8.5)1
176	Greater than 95.0%, but less than 101.0% of mass 174	83.9 (99.6)1
177	5.0 - 9.0% of mass 176	5.9 (7.0)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD50	50 PPB	EF501	5/ 8/89	8:26
2	VBLK2	METHOD BLANK	EF502	5/ 8/89	9:31
3	NSLB4S4	EA# 2092	EF503	5/ 8/89	10:21
4	NSLB5S3	EA# 2094	EF504	5/ 8/89	11:07
5	NSLB6S2	EA# 2096	EF505	5/ 8/89	11:53
6	RINSE#1	EA# 2098	EF506	5/ 8/89	12:39
7	RINSE#2	EA# 2099	EF507	5/ 8/89	13:25
8	TRIP BL	EA# 2100	EF508	5/ 8/89	14:12
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5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID: EF517 BFB Injection Date: 5/ 9/89

Instrum nt ID.: 7002E5 BFB Injection Time: 12:21

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.5
75	30.0 - 60.0% of mass 95	51.1
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.8
173	Less than 2.0% of mass 174	.0 (.0)1
174	Greater than 50.0% of mass 95	78.6
175	5.0 - 9.0% of mass 174	6.5 (8.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	78.5 (99.9)1
177	5.0 - 9.0% of mass 176	5.4 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD50	50 PPB	EF518	5/ 9/89	13:03
2	VBLK3	METHOD BLANK	EF519	5/ 9/89	14:15
3	SCE9SL1	EA # 2101	EF520	5/ 9/89	15:01
4	DUP9SL1	EA # 2102	EF521	5/ 9/89	15:42
5	DUP	EA # 210~~3~~ 4	EF522	5/ 9/89	16:22
6	DUP MS	EA # 210~~3~~ 4	EF523	5/ 9/89	17:03
7	DUP MSD	EA # 210~~3~~ 4	EF524	5/ 9/89	17:43
(1-5) 8	FTAB1S2 DL	EA # 2105 (1-5)	EF525	5/ 9/89	18:24
9	FTAB2S3	EA # 2107	EF526	5/ 9/89	19:05
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5A
VOLATILE ORGANIC GC/MS TUNING AND MASS
CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Lab File ID: EF517 BFB Injection Date: 5/ 9/89

Instrument ID.: 7002E5 BFB Injection Time: 12:21

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	23.5
75	30.0 - 60.0% of mass 95	51.1
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.8
173	Less than 2.0% of mass 174	.0 (.0)1
174	Greater than 50.0% of mass 95	78.6
175	5.0 - 9.0% of mass 174	6.5 (8.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	78.5 (99.9)1
177	5.0 - 9.0% of mass 176	5.4 (6.9)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD50	50 PPB	EF518	5/ 9/89	13:03
2	VBLK1	METHOD BLANK	EF519	5/ 9/89	14:15
3	FTAB3S1	EA# 2150	EF527	5/ 9/89	19:45
4	FTAB4S2	EA# 2152	EF528	5/ 9/89	20:25
5	B2S1	EA# 2156	EF530	5/ 9/89	21:46
6	B1S3 DL	EA# 2154 (1-5)	EF531	5/ 9/89	22:26
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VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID: EF542 BFB Injection Date: 5/11/89

Instrument ID.: 7002E5 BFB Injection Time: 7:03

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.3
75	30.0 - 60.0% of mass 95	50.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	.0 (.0)1
174	Greater than 50.0% of mass 95	80.0
175	5.0 - 9.0% of mass 174	6.8 (8.5)1
176	Greater than 95.0%, but less than 101.0% of mass 174	79.8 (99.8)1
177	5.0 - 9.0% of mass 176	6.1 (7.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD50	50 PPB	EF543	5/11/89	8:00
2	VBLK4	METHOD BLANK	EF544	5/11/89	9:11
(1-25) 3	FTAB1S2 DL	EA # 2105 (1-25)	EF545	5/11/89	9:59
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VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Lab File ID: EF542 BFB Injection Date: 5/11/89

Instrument ID.: 7002E5 BFB Injection Time: 7:03

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.3
75	30.0 - 60.0% of mass 95	50.0
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.9
173	Less than 2.0% of mass 174	.0 (.0)1
174	Greater than 50.0% of mass 95	80.0
175	5.0 - 9.0% of mass 174	6.8 (8.5)1
176	Greater than 95.0%, but less than 101.0% of mass 174	79.8 (99.8)1
177	5.0 - 9.0% of mass 176	6.1 (7.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
1	VSTD50	50 PPB	EF543	5/11/89	8:00
2	VBLK2	METHOD BLANK	EF544	5/11/89	9:11
(1-DB) 3	B1S3 DL	EA# 2154 (1:20)	EF546	5/11/89	10:46
4	RINSE1	EA# 2158	EF547	5/11/89	11:52
5	TRIP BL	EA# 2159	EF548	5/11/89	12:58
6	NSLW2	EA# 2160	EF549	5/11/89	14:04
7	NSLW3	EA# 2205	EF550	5/11/89	15:10
8	NSLW3MS	EA# 2205	EF551	5/11/89	16:16
9	NSLW3MSD	EA# 2205	EF552	5/11/89	17:22
10	NSLW4	EA# 2206	EF553	5/11/89	18:28
11	TRIP BL	EA# 2207	EF554	5/11/89	19:34
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B. Sample Data

U.S. EPA CLP ORGANIC ANALYSIS DATA QUALIFIERS

U Indicates a compound on the target compound list (TCL) was analyzed for but not detected. The sample quantitation limit must be corrected for dilution and, if a soil sample, for percent moisture. For example, 10 U is used for phenol in water if the sample final volume is the protocol-specified final volume. If a 1-to-10 dilution of the extract was necessary, the reported limit is (10 x 10 U) or 100 U. For a soil sample, the value is also adjusted for percent moisture. For example, if the sample had 24% moisture and a 1-to-10 dilution factor, the soil sample quantitation limit for phenol (330 U) would be corrected as follows:

Reported limit = (330 U) x df / D

where: df = dilution factor = 10

D = (100 - % moisture) / 100

At 24% moisture, D = (100-24) / 100 = 0.76

Reported limit = (330 U) x 10 / 0.76 = 4300 U

(rounded to two significant figures)

For soil samples subjected to gel permeation chromatography (GPC) cleanup procedures, the contract required quantiation limit (CRQL) is also multiplied by 2 to account for the fact that only half of the extract is recovered. Note: If GPC procedures are employed, the factor of 2 is not included in the dilution factor reported; a "Y" is entered for GPC (Y/N).

J Indicates an estimated value. This flag is used either when the concentration of a tentatively identified compound (TIC) is estimated assuming a 1:1 response, or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the sample quantitation limit but greater than zero. For example, if the sample quantitation limit is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3 J. The sample quantitation limit must be adjusted for both dilution and percent moisture as discussed for the U flag, so that if a sample with 24% moisture and a 1-to-10 dilution factor has a calculated concentration of 300 ug/L and a sample quantitation limit of 430 ug/kg, the concentration is reported as 300 J.

C This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides with concentration equal to or greater than 10 ng/uL in the final extract must be confirmed by GC/MS.

B This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. This flag is used for a TIC as well as for a positively identified TCL compound.

E This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for that specific analysis. This flag does not apply to pesticides/PCBs analyzed by GC/EC methods. If one or more compounds have a response greater that full scale, the sample or extract must be diluted and reanalyzed according to the specifications listed in the SOW. All such compounds with a response greater than full scale should have a concentration flagged with an "E" on Form I for the original analysis. If the dilution of the extract causes any compounds identified in the first analysis to be below the calibration range in the second analysis, then the results of both analyses are reported on separate Forms I. The Form I for the diluted sample will have the "DL" suffix appended to the sample number.
NOTE: For total xylenes, where three isomers are quantified as two peaks, the calibration range of each peak is considered separately; e.g., a diluted analysis is not required for total xylenes unless the concentration of either peak separately exceeds 200 ug/L.

D This flag identifies all compounds identified in the analysis at a secondary dilution factor. If a sample or extract is reanalyzed at a higher dilution factor, as in the "E" flag above, the "DL" suffix is appended to the sample number on the Form I for the diluted sample, and all concentration values reported on that Form I are flagged with the "D" flag.

A This flag indicates that a TIC is a suspected aldol-condensation product.

X Other specific flags may be required to properly define the results. If used, they are fully described and such description attached to the Sample Data Summary Package and the Case Narrative. The flags begin by using "X". If more that one flag is required, "Y" and "Z" are used, as needed. For instance, the "X" flag might combine the "A", "B", and "D" flags for some sample.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB1S2

Lab Nam : EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2086

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF493

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 15. Date Analyzed: 5/ 6/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styren	6.	U
1330-20-7	Xylene (total)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB1S2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2086

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF493

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 15. Date Analyzed: 5/ 6/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	None Detected			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
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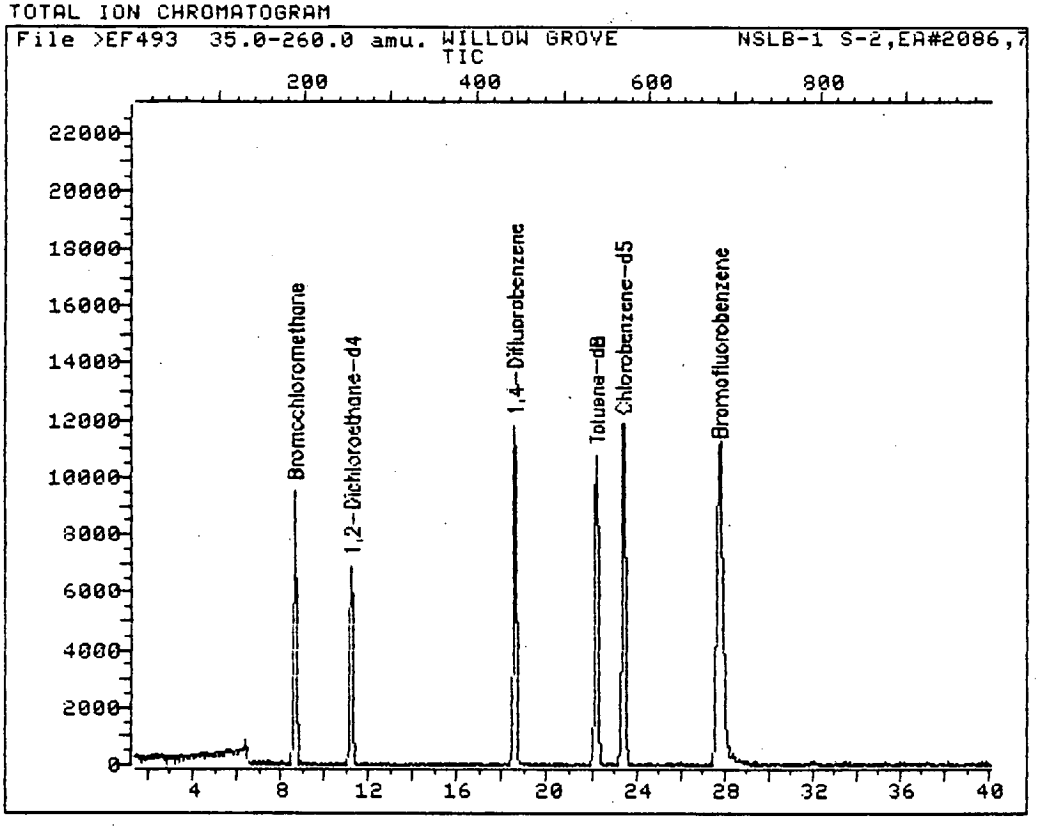
29.				
30.				

TOTAL ION CHROMATOGRAM



Data File: >EF493::D2 Quant Output File: ^EF493::QT
Name: WILLOW GROVE
Misc: NSLB-1 S-2,EA#2086,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890506 08:53

Operator ID: CARL
Quant Time: 890506 15:28
Injected at: 890506 14:47

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890506 15:28
Output File: ^EF493::QT Injected at: 890506 14:47
Data File: >EF493::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: NSLB-1 S-2,EA#2086,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890506 08:53

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	12338	50.00	UG/KG	86
13)	1,2-Dichloroethane-d4	11.24	65.0	31937	52.24	UG/KG	79
15)	*1,4-Difluorobenzene	18.57	114.0	45502	50.00	UG/KG	89
29)	*Chlorobenzene-d5	23.41	117.0	40405	50.00	UG/KG	93
35)	Toluene-d8	22.21	98.0	43657	49.65	UG/KG	99
40)	Bromofluorobenzene	27.75	95.0	39142	53.51	UG/KG	85

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB2S1

Lab Name: EAENG Contract: 68-01-7436

Lab Cod : EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2088

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF494

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 16. Date Analyzed: 5/ 6/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB2S1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2088

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF494

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 16. Date Analyzed: 5/ 6/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		None found			
2.					
3.					
4.					
5.					
6.					
7.					
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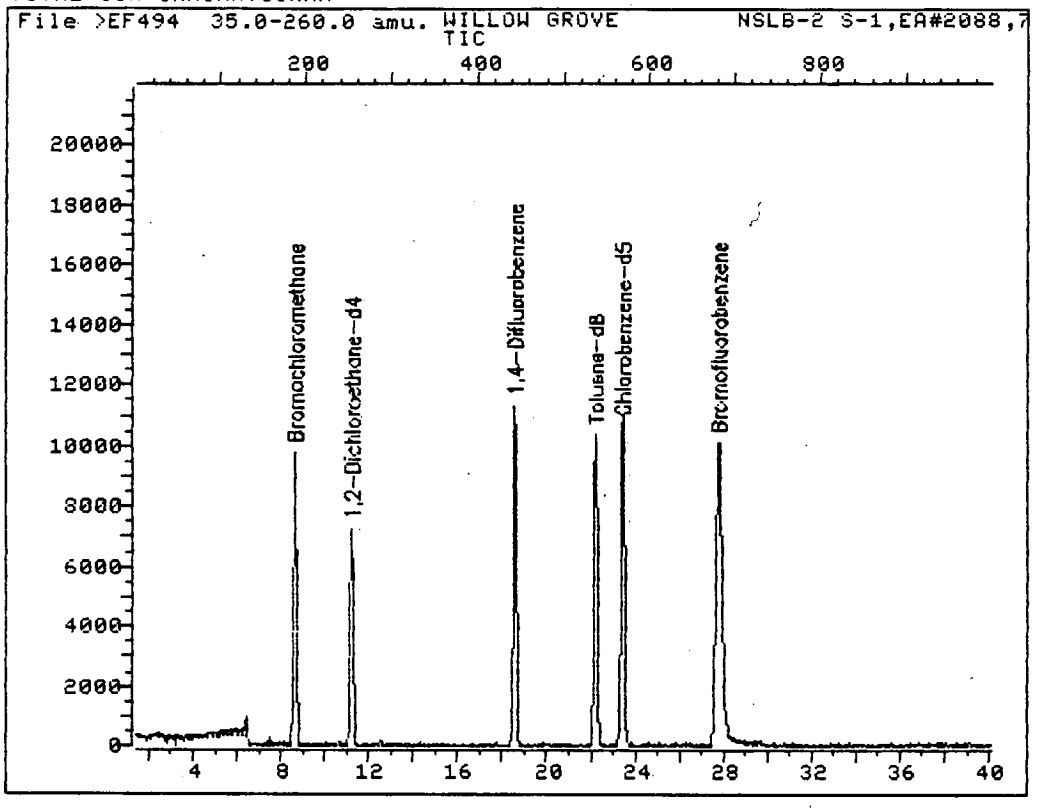
TOTAL ION CHROMATOGRAM



Data File: >EF494::D2 Quant Output File: ^EF494::QT
Name: WILLOW GROVE
Misc: NSLB-2 S-1,EA#2088,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890506 08:53

Operator ID: CARL
Quant Time: 890506 16:13
Injected at: 890506 15:32

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890506 16:13
Output File: ^EF494::QT Injected at: 890506 15:32
Data File: >EF494::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: NSLB-2 S-1,EA#2088,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890506 08:53

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	12611	50.00	UG/KG	89
13)	1,2-Dichloroethane-d4	11.24	65.0	32433	51.90	UG/KG	78
15)	*1,4-Difluorobenzene	18.57	114.0	43200	50.00	UG/KG	91
29)	*Chlorobenzene-d5	23.41	117.0	37313	50.00	UG/KG	96
35)	Toluene-d8	22.21	98.0	42505	52.35	UG/KG	98
40)	Bromofluorobenzene	27.75	95.0	34175	50.59	UG/KG	84

* Compound is ISTD

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB3S3 DL

Lab Nam : EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA #2090

Sampl wt/vol: 1.0 ~~5.0~~ JK 5-24-89 (g/mL) G Lab File ID: EF495

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 20. Date Analyzed: 5/ 6/89

Column: (pack/cap) PACK Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	63.	U
74-83-9	Bromomethane	63.	U
75-01-4	Vinyl Chloride	63.	U
75-00-3	Chloroethane	63.	U
75-09-2	Methylene Chloride	31.	U
67-64-1	Acetone	63.	U
75-15-0	Carbon Disulfide	31.	U
75-35-4	1,1-Dichloroethene	31.	U
75-34-3	1,1-Dichloroethane	31.	U
540-59-0	1,2-Dichloroethene (total)	31.	U
67-66-3	Chloroform	31.	U
107-06-2	1,2-Dichloroethane	31.	U
78-93-3	2-Butanone	63.	U
71-55-6	1,1,1-Trichloroethane	22.	J
56-23-5	Carbon Tetrachloride	31.	U
108-05-4	Vinyl Acetate	63.	U
75-27-4	Bromodichloromethane	31.	U
78-87-5	1,2-Dichloropropane	31.	U
10061-01-5	cis-1,3-Dichloropropene	31.	U
79-01-6	Trichloroethene	31.	U
124-48-1	Dibromochloromethane	31.	U
79-00-5	1,1,2-Trichloroethane	31.	U
71-43-2	Benzene	31.	U
10061-02-6	trans-1,3-Dichloropropene	31.	U
75-25-2	Bromoform	31.	U
108-10-1	4-Methyl-2-Pentanone	63.	U
591-78-6	2-Hexanone	63.	U
127-18-4	Tetrachloroethene	31.	U
79-34-5	1,1,2,2-Tetrachloroethane	31.	U
108-88-3	Toluene	180.	
108-90-7	Chlorobenzene	31.	U
100-41-4	Ethylbenzene	31.	U
100-42-5	Styrene	31.	U
1330-20-7	Xylene (total)	31.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB3S3 DL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2090

Sample wt/vol: 1.0 ~~5.0~~ (g/mL) G Lab File ID: EF495

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 20. Date Analyzed: 5/ 6/89

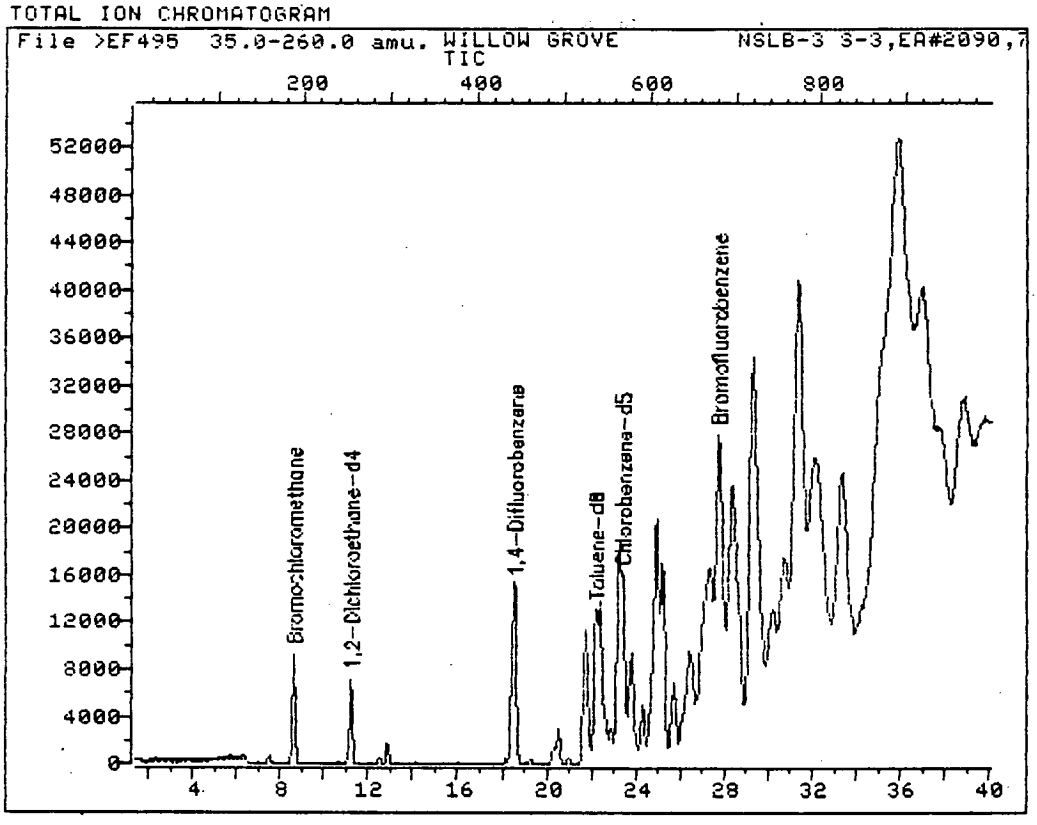
Column: (pack/cap) PACK Dilution Factor: 5.00

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	763-29-1	1-Pentene, 2-methyl- (8CI9CI	12.87	50.	J
2.	- -	UNKNOWN HYDROCARBON	20.51	60.	J
3.	62016-14-2	Octane, 2,5,6-trimethyl- (9C	21.75	200.	J
4.	1678-91-7	Cyclohexane, ethyl- (8CI9CI)	23.18	80.	J
5.	- -	UNKNOWN	23.84	80.	J
6.	- -	UNKNOWN C8H16	24.35	40.	J
7.	3073-66-3	Cyclohexane, 1,1,3-trimethyl	24.93	300.	J
8.	3868-64-2	Pentalene, octahydro-2-methy	25.20	200.	J
9.	- -	UNKNOWN	25.74	60.	J
10.	4926-90-3	Cyclohexane, 1-ethyl-1-methy	26.44	200.	J
11.	- -	UNKNOWN C9H18	27.33	300.	J
12.	- -	UNKNOWN C10H16	28.38	400.	J
13.	- -	UNKNOWN	29.35	700.	J
14.	- -	UNKNOWN C10H18	30.24	70.	J
15.	- -	UNKNOWN C9H18	30.71	100.	J
16.	- -	UNKNOWN C10H20	31.37	600.	J
17.	- -	UNKNOWN C10H18	33.39	400.	J
18.	91-17-8	Naphthalene, decahydro- (8CI	35.91	2000.	J
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

TOTAL ION CHROMATOGRAM



Data File: >EF495::D2 Quant Output File: ^EF495::QT
Name: WILLOW GROVE
Misc: NSLB-3 S-3,EA#2090,7002E5,SOIL,~~1~~5.0GM (1/5 DIL)

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890506 08:53

Operator ID: CARL
Quant Time: 890506 16:59
Injected at: 890506 16:18

QUANT REPORT

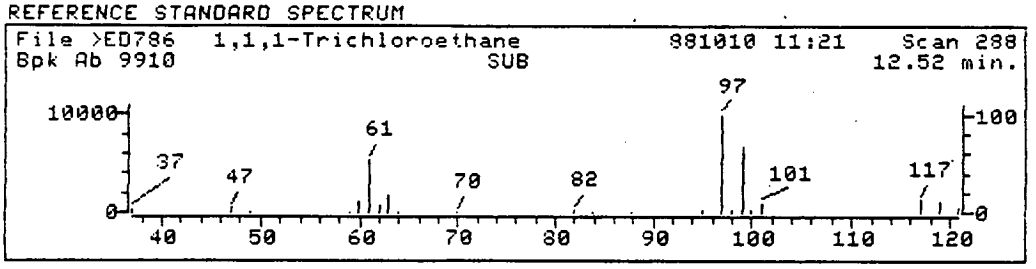
Operator ID: CARL Quant Rev: 6 Quant Time: 890506 16:59
Output File: ^EF495::QT Injected at: 890506 16:18
Data File: >EF495::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: NSLB-3 S-3,EA#2090,7002E5,SOIL,1.0GM (1/5 DIL)

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890506 08:53

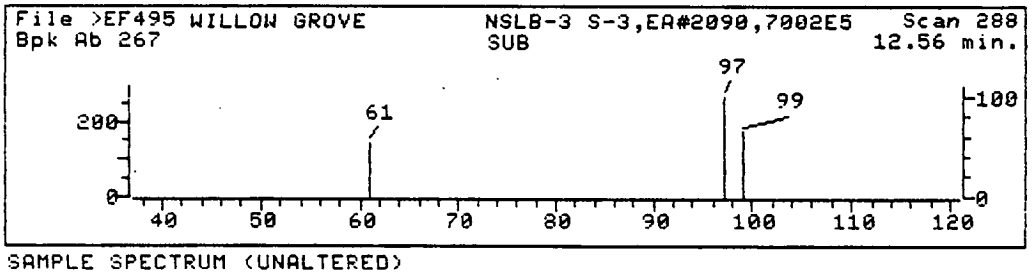
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	12038	50.00	UG/KG	88
13)	1,2-Dichloroethane-d4	11.24	65.0	31476	52.77	UG/KG	80
15)	*1,4-Difluorobenzene	18.57	114.0	44814	50.00	UG/KG	91
17)	1,1,1-Trichloroethane	12.56	97.0	2579	3.55	UG/KG	93
29)	*Chlorobenzene-d5	23.41	117.0	35898	50.00	UG/KG	93
34)	Toluene	22.41	92.0	11564	28.82	UG/KG	96
35)	Toluene-d8	22.21	98.0	41532	53.17	UG/KG	98
40)	Bromofluorobenzene	27.76	95.0	35442M	54.53	UG/KG	70

* Compound is ISTD

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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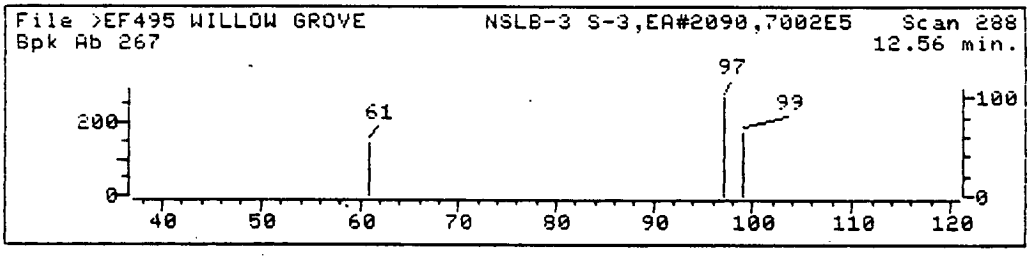
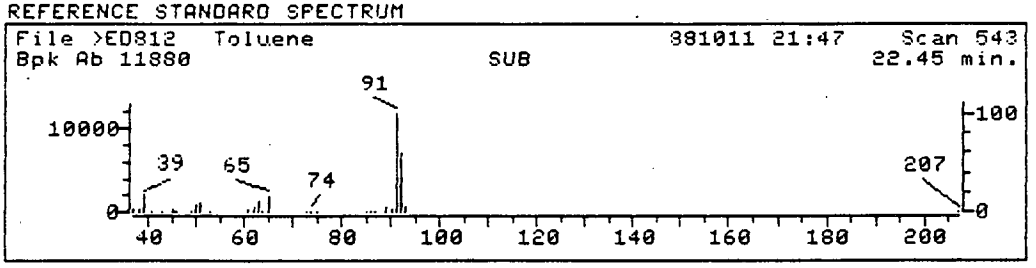


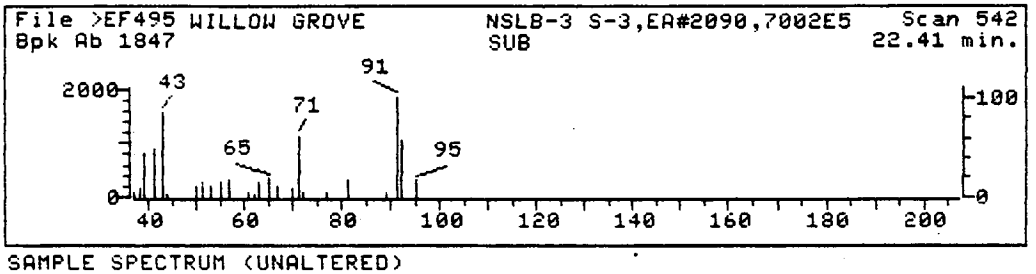
Data File: >EF495::D2 Quant Output File: ^EF495::QT
Name: WILLOW GROVE
Misc: NSLB-3 S-3,EA#2090,7002E5,SOIL,5.0GM
Quant Time: 890506 16:59 Quant ID File: EVOAS::BD
Injected at: 890506 16:18 Last Calibration: 890506 08:53

Compound No: 17
Compound Name: 1,1,1-Trichloroethane
Scan Number: 288
Retention Time: 12.56 min.
Quant Ion: 97.0
Area: 2579
Concentration: 3.55 UG/KG
q-value: 93

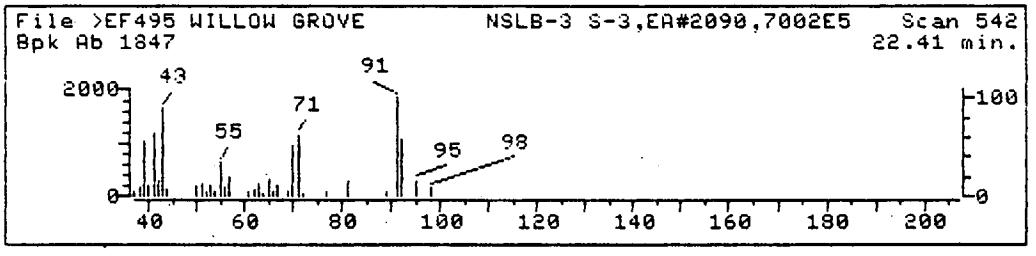
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

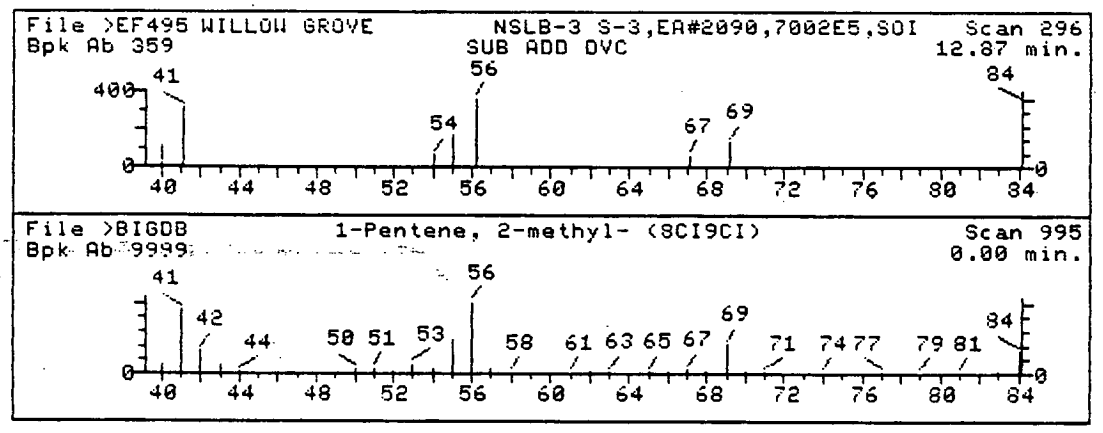


SAMPLE SPECTRUM (UNALTERED)



Data File: >EF495::D2 Quant Output File: ^EF495::QT
Name: WILLOW GROVE
Misc: NSLB-3 S-3,EA#2090,7002E5,SOIL,5.0GM
Quant Time: 890506 16:59 Quant ID File: EVOAS::BD
Injected at: 890506 16:18 Last Calibration: 890506 08:53

Compound No: 34
Compound Name: Toluene
Scan Number: 542
Retention Time: 22.41 min.
Quant Ion: 92.0
Area: 11564
Concentration: 28.82 UG/KG
q-value: 96



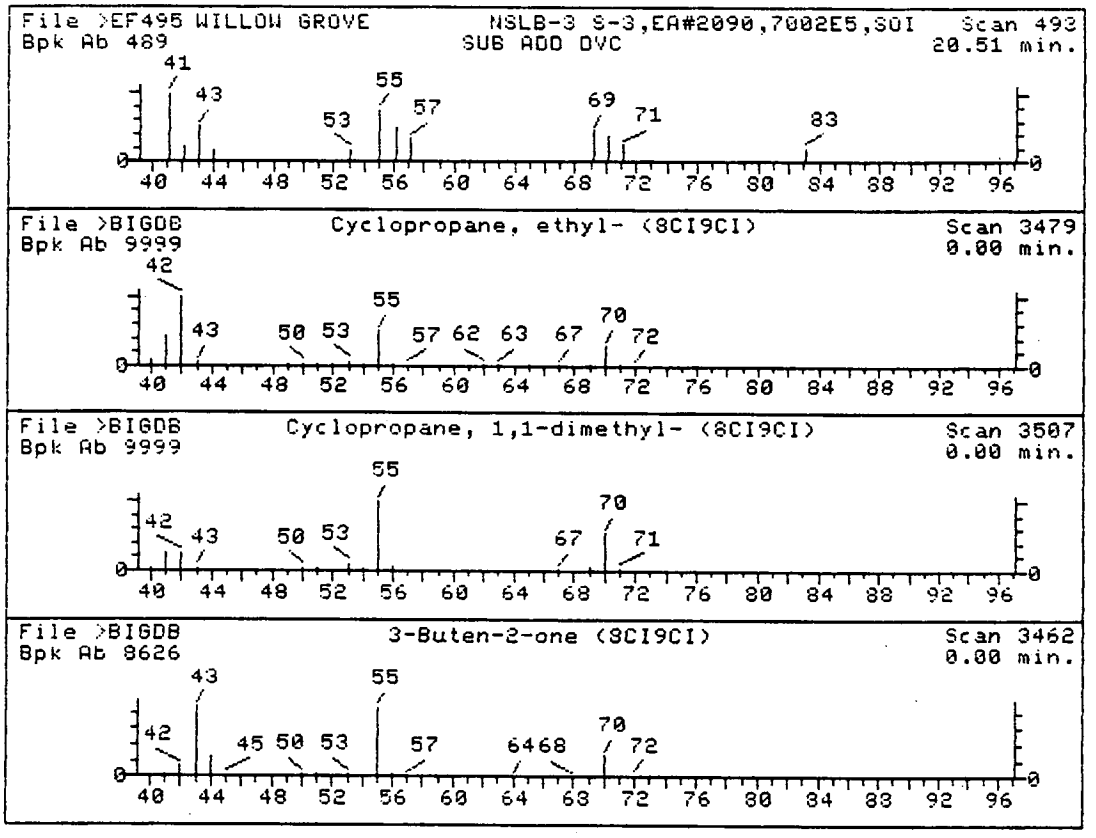
Retention time = 12.87

Area = 14204.00 Tentative Concentration is 8.00

1. 1-Pentene, 2-methyl- (8CI9CI) 84 C6H12

Sample file: >EF495 Spectrum #: 296
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	42*	763291	995	"BIGDB	29	72	3	0	95	25	17	13



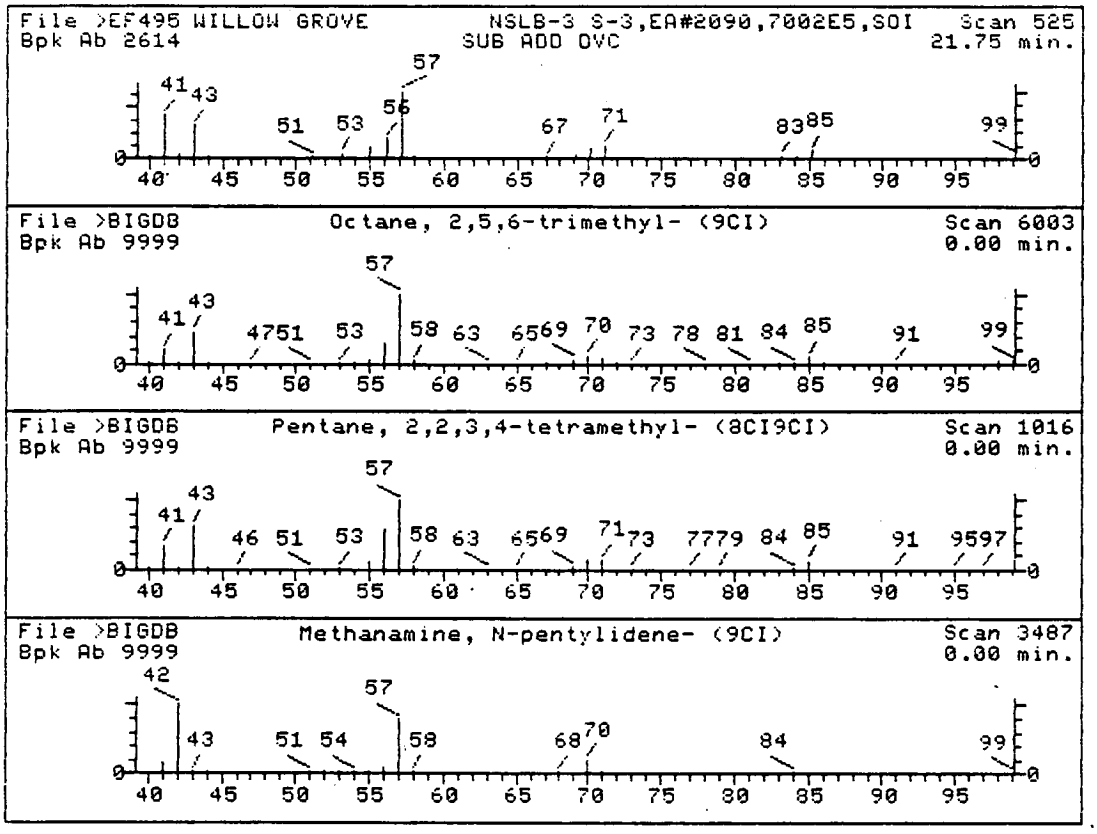
Retention time = 20.51 UNKNOWN HYDROCARBON

Area = 43013.00 Tentative Concentration is 10.00

1. Cyclopropane, ethyl- (8CI9CI) 70 C5H10
2. Cyclopropane, 1,1-dimethyl- (8CI9CI) 70 C5H10
3. 3-Buten-2-one (8CI9CI) 70 C4H6O
4. Aziridine, 2-ethyl- (8CI9CI) 71 C4H9N

Sample file: >EF495 Spectrum #: 493
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	25*	1191964	3479	"BIGDB	25	61	2	0	132	49	7	14
2.	20*	1630940	3507	"BIGDB	22	61	2	0	68	52	5	13
3.	11*	78944	3462	"BIGDB	20	68	2	0	60	62	2	13
4.	11*	2549679	3510	"BIGDB	24	74	1	0	50	65	2	14



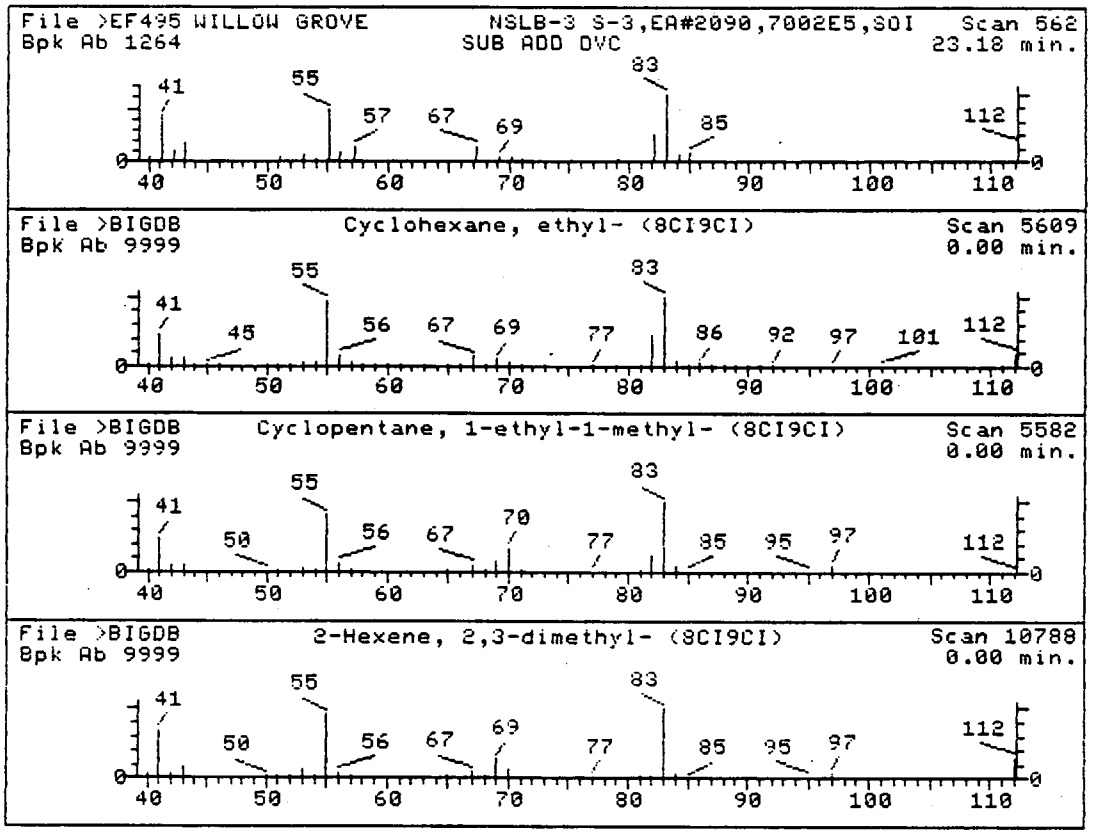
Retention time = 21.75

Area = 172345.0 Tentative Concentration is 24.00

1. Octane, 2,5,6-trimethyl- (9CI) 156 C11H24
2. Pentane, 2,2,3,4-tetramethyl- (8CI9CI) 128 C9H20
3. Methanamine, N-pentylidene- (9CI) 99 C6H13N

Sample file: >EF495 Spectrum #: 525
Search speed: 2 Tilting option: S No. of ion ranges searched: 53

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	60	62016142	6003	"BIGDB	55	32	2	0	100	13	30	19
2.	43	1186534	1016	"BIGDB	51	35	3	0	100	23	17	14
3.	29*	10599754	3487	"BIGDB	22	53	3	0	126	32	12	12



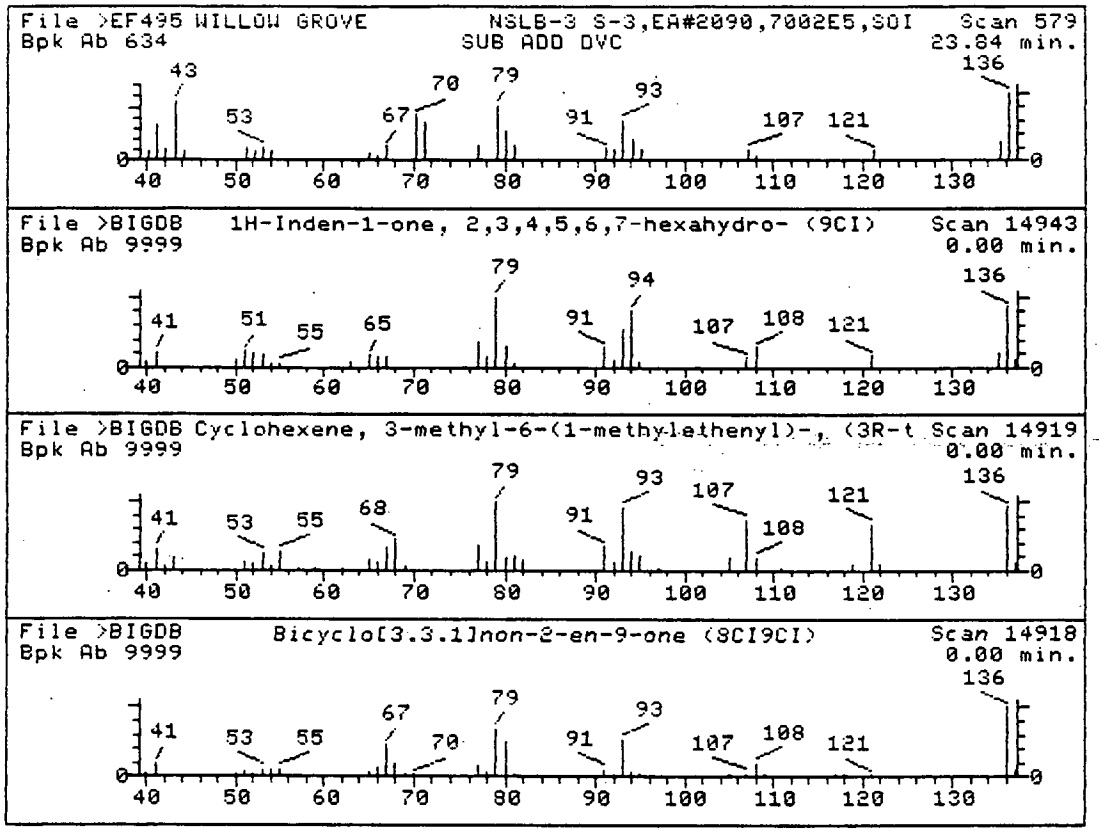
Retention time = 23.18

Area = 93858.00 Tentative Concentration is 13.00

1.	Cyclohexane, ethyl- (8CI9CI)	112	C8H16
2.	Cyclopentane, 1-ethyl-1-methyl- (8CI9CI)	112	C8H16
3.	2-Hexene, 2,3-dimethyl- (8CI9CI)	112	C8H16
4.	Cyclohexane, azido- (8CI9CI)	125	C6H11N3
5.	2-Pentene, 4,4-dimethyl-, (E)- (8CI9CI)	98	C7H14
6.	2(5H)-Furanone, 5-ethyl- (8CI9CI)	112	C6H8O2
7.	Pyridine, 2,3,4,5-tetrahydro- (8CI9CI)	83	C5H9N

Sample file: >EF495 Spectrum #: 562
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	60*	1678917	5609	"BIGDB	43	56	2	0	81	13	30	17
2.	47*	16747505	5582	"BIGDB	51	53	2	2	78	24	17	18
3.	43*	7145202	10788	"BIGDB	42	52	2	0	84	26	19	21
4.	31	19573229	5568	"BIGDB	43	45	2	0	79	34	12	14
5.	31	690084	5589	"BIGDB	47	44	2	0	91	33	12	14
6.	26*	2407434	5610	"BIGDB	27	81	2	0	72	44	8	14
7.	25*	505180	5562	"BIGDB	31	62	3	0	172	47	7	13



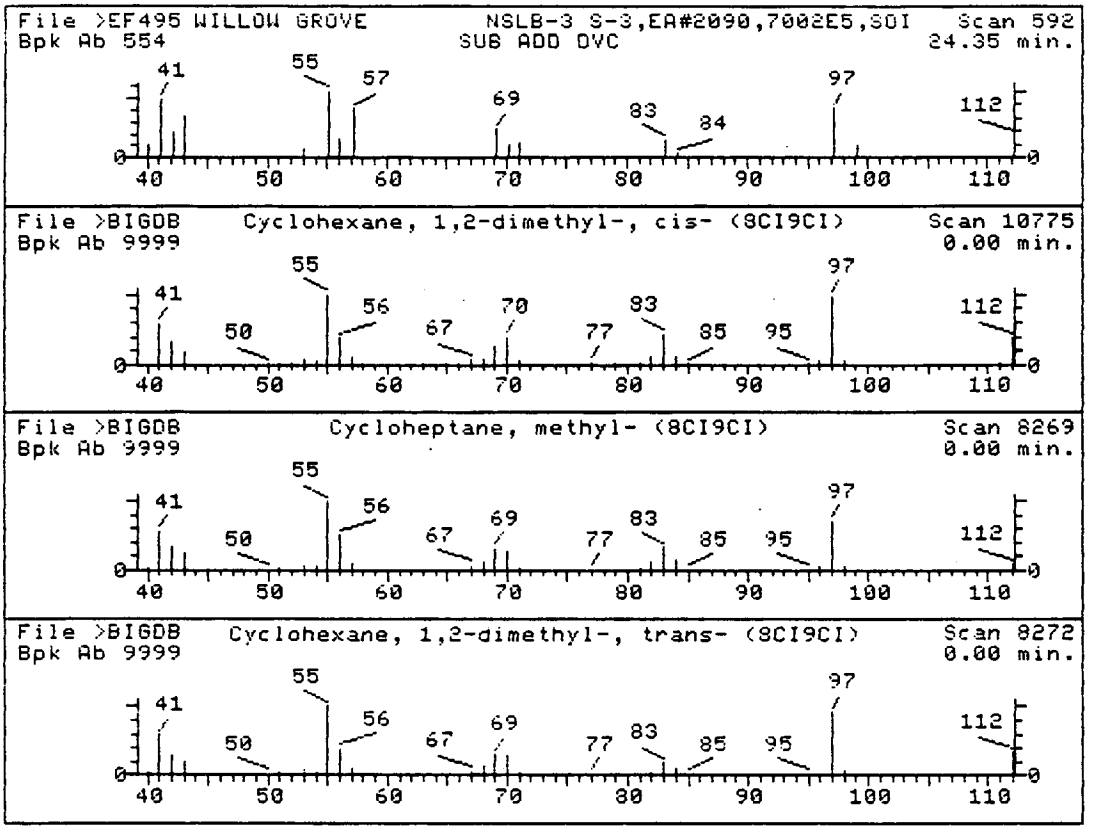
Retention time = 23.84 UNKNOWN

Area = 85967.00 Tentative Concentration is 12.00

1.	1H-Inden-1-one, 2,3,4,5,6,7-hexahydro- (9CI)	136	C9H12O
2.	Cyclohexene, 3-methyl-6-(1-methylethenyl)-, (3R-trans)- (9CI)	136	C10H16
3.	Bicyclo[3.3.1]non-2-en-9-one (8CI9CI)	136	C9H12O
4.	.beta.-Phellandrene	136	C10H16
5.	Bicyclo[3.1.0]hex-2-ene, 4-methyl-1-(1-methylethyl)- (9CI)	136	C10H16
6.	1,3-Cyclohexadiene, 1,5,5,6-tetramethyl- (8CI9CI)	136	C10H16
7.	Bicyclo[2.2.1]heptane, 2,2-dimethyl-5-methylene- (9C	136	C10H16

Sample file: >EF495 Spectrum #: 579
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	39*	22118009	14943	"BIGDB	57	73	3	0	80	34	16	22
2.	35*	5113871	14919	"BIGDB	63	67	3	0	65	50	11	31
3.	30*	4844115	14918	"BIGDB	36	80	3	0	92	32	12	13
4.	27*	555102	14818	"BIGDB	34	75	3	0	365	36	10	13
5.	27*	28634891	7803	"BIGDB	25	67	3	0	474	39	10	13
6.	25*	514943	12425	"BIGDB	25	79	3	0	325	4[illegible]	[illegible]	13



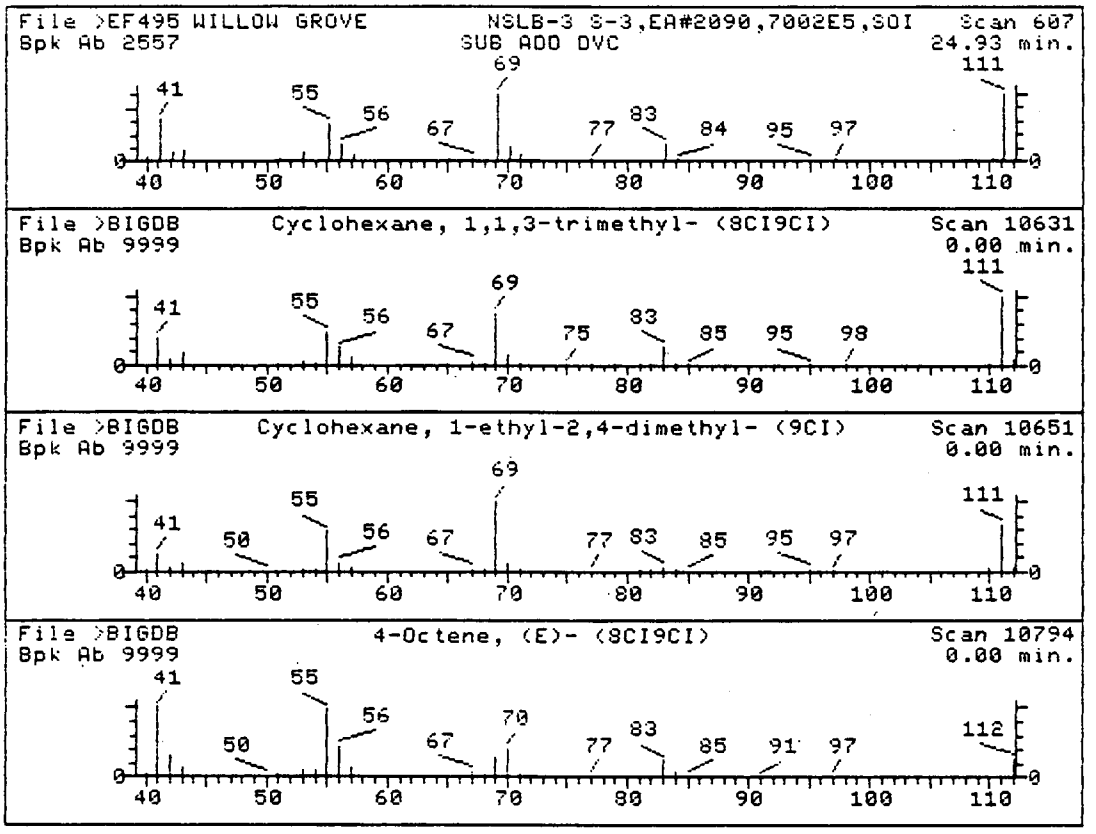
Retention time = 24.35 UNKNOWN C8H16

Area = 43381.00 Tentative Concentration is 6.00

1. Cyclohexane, 1,2-dimethyl-, cis- (8CI9CI)	112	C8H16
2. Cycloheptane, methyl- (8CI9CI)	112	C8H16
3. Cyclohexane, 1,2-dimethyl-, trans- (8CI9CI)	112	C8H16
4. Cyclohexane, 1,3-dimethyl-, trans- (8CI9CI)	112	C8H16
5. Cyclohexane, 1,4-dimethyl-, cis- (8CI9CI)	112	C8H16
6. 1H-1,2,4-Triazole, 1-ethyl- (8CI9CI)	97	C4H7N3
7. 2-Pentenal, 2-ethyl- (8CI9CI)	112	C7H12O

Sample file: >EF495 Spectrum #: 592
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	25*	2207014	10775	"BIGDB	35	78	3	0	75	43	8	13
2.	25*	4126787	8269	"BIGDB	29	77	3	0	100	43	8	13
3.	25*	6876239	8272	"BIGDB	25	82	3	0	80	46	7	13
4.	20*	2207036	8265	"BIGDB	39	61	2	0	78	51	5	15
5.	20*	624293	8259	"BIGDB	39	63	2	0	86	54	5	14
6.	20*	16778704	8219	"BIGDB	24	72	3	0	69	53	5	12
7.	15*	3491574	10779	"BIGDB	51	60	3	0	98	60	3	14



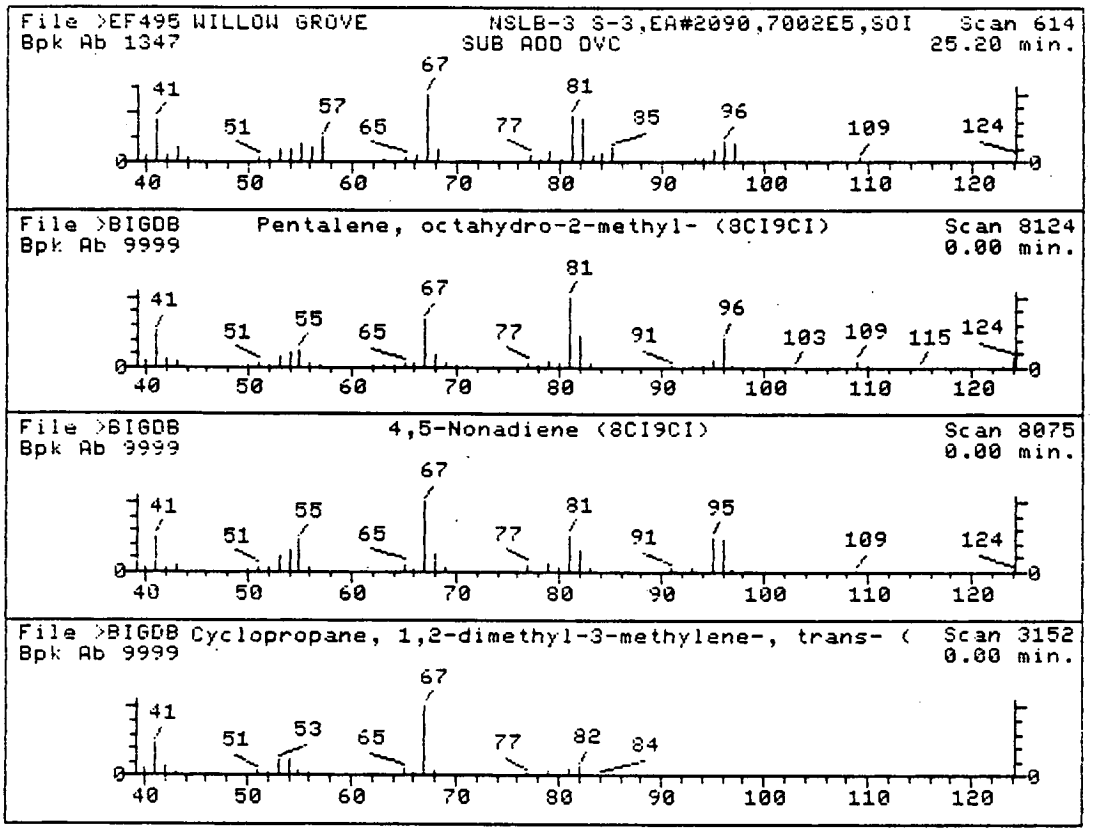
Retention time = 24.93

Area = 327883.0 Tentative Concentration is 46.00

1.	Cyclohexane, 1,1,3-trimethyl- (8CI9CI)	126	C9H18
2.	Cyclohexane, 1-ethyl-2,4-dimethyl- (9CI)	140	C10H20
3.	4-Octene, (E)- (8CI9CI)	112	C8H16
4.	2-Cyclopenten-1-one, 3-amino-2-methyl- (9CI)	111	C6H9NO
5.	1-Hexene, 3,3-dimethyl- (8CI9CI)	112	C8H16
6.	2(1H)-Pyrimidinone, 4-amino- (9CI)	111	C4H5N3O
7.	4-Octene, (Z)- (8CI9CI)	112	C8H16

Sample file: >EF495 Spectrum #: 607
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	67	3073663	10631	"BIGDB	70	29	2	0	95	11	34	25
2.	46	61142696	10651	"BIGDB	50	40	2	0	100	21	17	17
3.	45*	14850238	10794	"BIGDB	55	32	2	1	37	40	17	34
4.	28*	69687850	10624	"BIGDB	31	63	2	0	226	40	10	14
5.	25*	3404771	3482	"BIGDB	28	58	3	0	110	50	7	13
6.	25*	71307	10625	"BIGDB	26	60	2	0	94	49	7	14
7.	24*	7642151	10789	"BIGDB	45	40	3	1	48	43	8	12



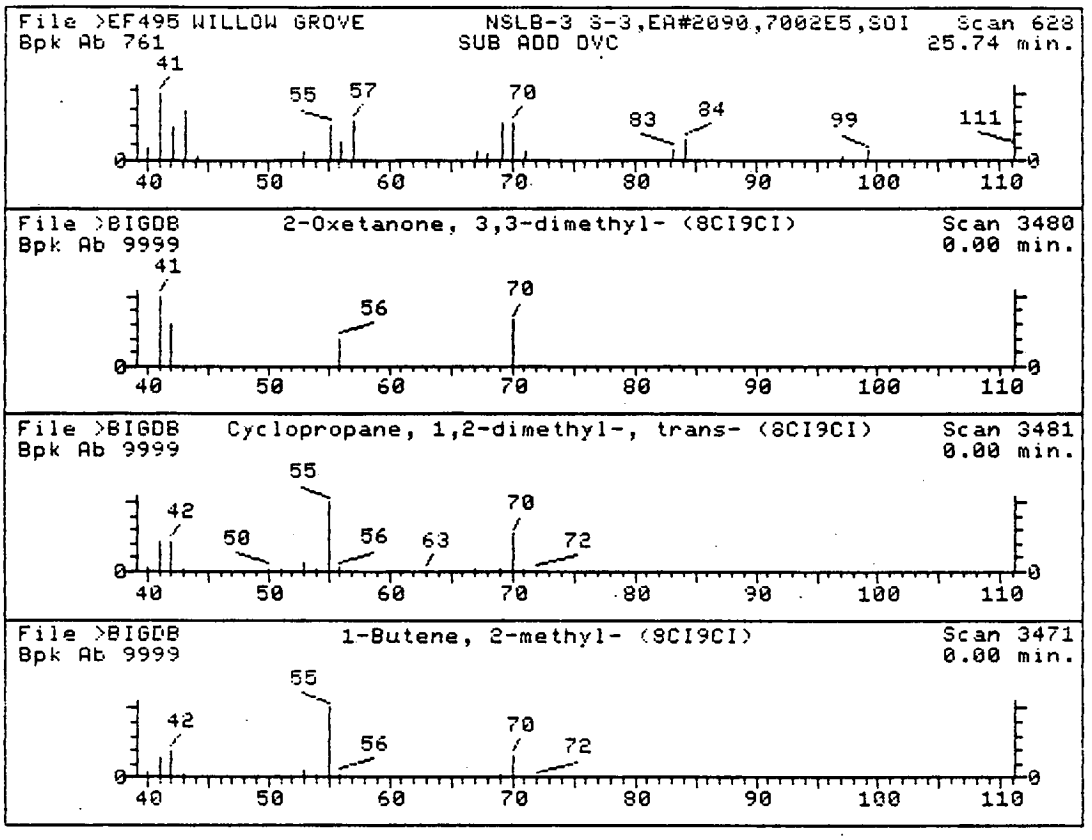
Retention time = 25.20

Area = 198837.0 Tentative Concentration is 28.00

1.	Pentalene, octahydro-2-methyl- (8CI9CI)	124	C9H16
2.	4,5-Nonadiene (8CI9CI)	124	C9H16
3.	Cyclopropane, 1,2-dimethyl-3-methylene-, trans- (8CI 9CI)	82	C6H10
4.	1,3-Pentadiene, 3-methyl-, (E)- (8CI9CI)	82	C6H10
5.	1,3-Pentadiene, 3-methyl-, (Z)- (8CI9CI)	82	C6H10
6.	4-Nonyne (8CI9CI)	124	C9H16
7.	2,4-Hexadiene (8CI9CI)	82	C6H10

Sample file: >EF495 Spectrum #: 614
Search speed: 2 Tilting option: S No. of ion ranges searched: 52

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	40*	3868642	8124	"BIGDB	59	52	1	1	72	50	12	44
2.	40*	821749	8075	"BIGDB	55	53	1	0	66	49	12	42
3.	32*	5070008	3152	"BIGDB	41	55	0	0	73	55	9	43
4.	31*	2787431	5301	"BIGDB	40	52	2	0	100	41	8	19
5.	31*	2787453	5302	"BIGDB	40	52	2	0	100	41	8	19
6.	31*	20184912	3185	"BIGDB	48	61	2	0	70	45	8	19
7.	31*	592461	5315	"BIGDB	40	57	2	0	92	39	10	17



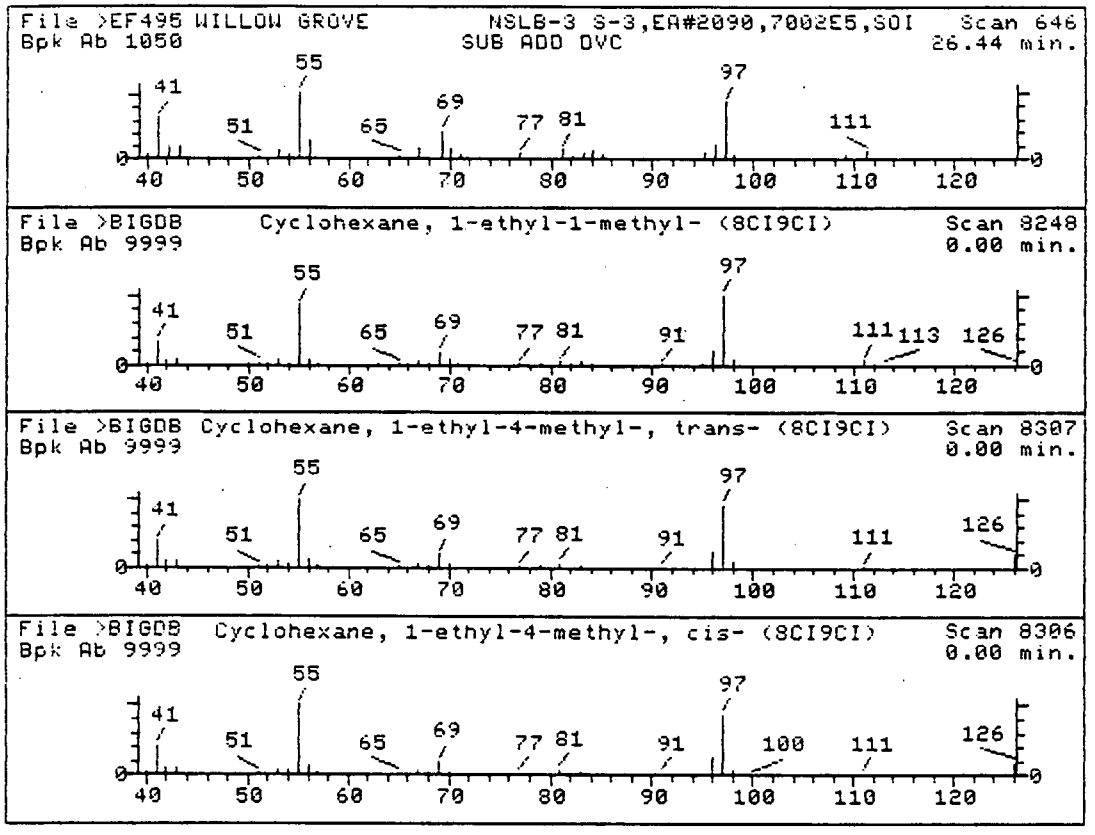
Retention time = 25.74 UNKNOWN

Area = 69030.00 Tentative Concentration is 10.00

1. 2-Oxetanone, 3,3-dimethyl- (8CI9CI)	100	C5H8O2
2. Cyclopropane, 1,2-dimethyl-, trans- (8CI9CI)	70	C5H10
3. 1-Butene, 2-methyl- (8CI9CI)	70	C5H10
4. 1-Butene, 3-methyl- (8CI9CI)	70	C5H10
5. 2-Butene, 2-methyl- (8CI9CI)	70	C5H10
6. Furan, 2,5-dihydro- (8CI9CI)	70	C4H6O
7. 2-Hexene, (Z)- (8CI9CI)	84	C6H12

Sample file: >EF495 Spectrum #: 628
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	34	1955459	3480	"BIGDB	39	11	0	0	75	37	14	21
2.	27*	2402064	3481	"BIGDB	30	60	2	0	107	44	8	15
3.	26*	563462	3471	"BIGDB	24	56	2	0	131	44	8	14
4.	26*	563451	3470	"BIGDB	24	56	2	0	163	44	8	14
5.	26*	513359	3469	"BIGDB	25	58	2	0	136	44	8	14
6.	26*	1708298	3508	"BIGDB	26	72	1	0	53	45	8	14
7.	25*	7688213	5700	"BIGDB	37	62	3	0	86	46	7	13



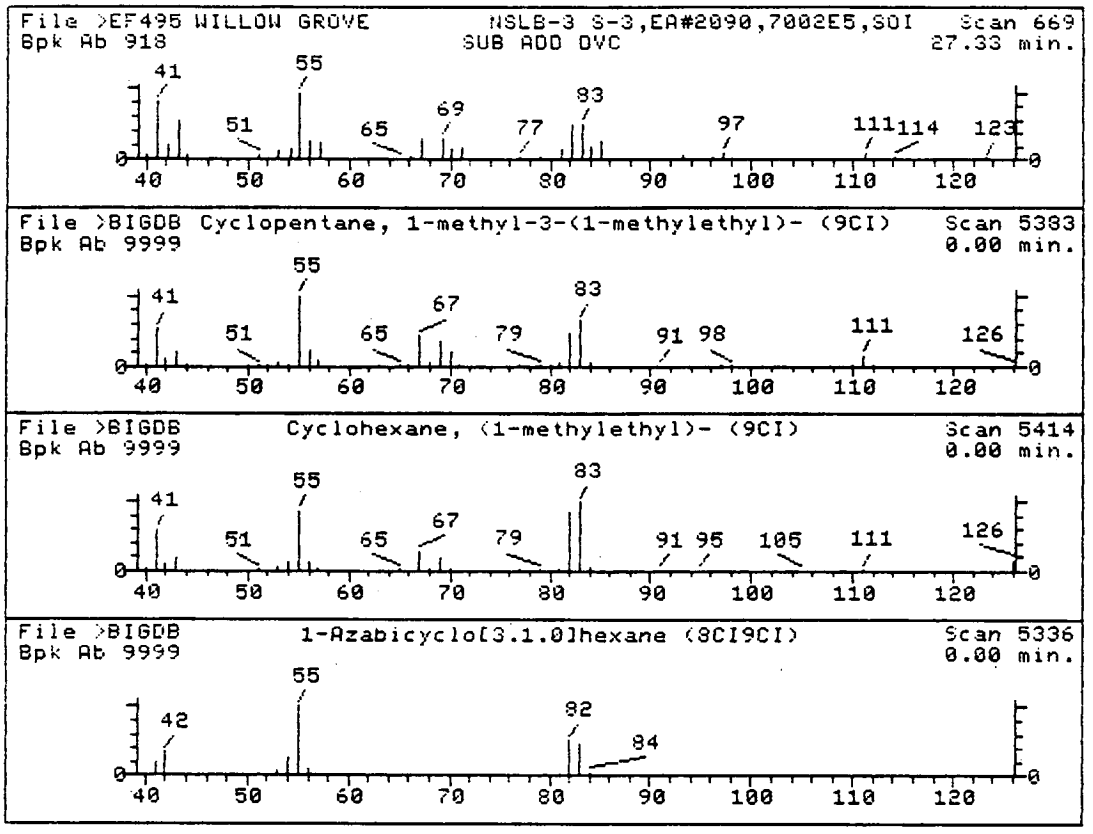
Retention time = 26.44

Area = 203151.0 Tentative Concentration is 29.00

1. Cyclohexane, 1-ethyl-1-methyl- (8CI9CI) 126 C9H18
2. Cyclohexane, 1-ethyl-4-methyl-, trans- (8CI9CI) 126 C9H18
3. Cyclohexane, 1-ethyl-4-methyl-, cis- (8CI9CI) 126 C9H18
4. 3-Heptanone, 5-methylene- (8CI) 126 C8H14O
5. Cyclohexane, 1-ethyl-2-methyl-, cis- (8CI9CI) 126 C9H18
6. 2-Hexene, 3,4,4-trimethyl- (9CI) 126 C9H18
7. 2-Pyrazoline, 5-ethyl-1,4-dimethyl- (8CI) 126 C7H14N2

Sample file: >EF495 Spectrum #: 646
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	62*	4926903	8248	"BIGDB	42	49	0	0	86	29	25	45
2.	53*	6236880	8307	"BIGDB	50	46	1	0	81	26	24	33
3.	51*	4926787	8306	"BIGDB	49	47	1	0	82	26	24	31
4.	41*	20690704	8197	"BIGDB	36	38	2	0	760	30	14	18
5.	33*	4923777	8305	"BIGDB	29	63	1	0	86	33	12	16
6.	31*	53941198	8320	"BIGDB	36	57	2	0	86	37	10	17
7.	28*	14339232	8309	"BIGDB	29	53	2	0	86	38	10	14



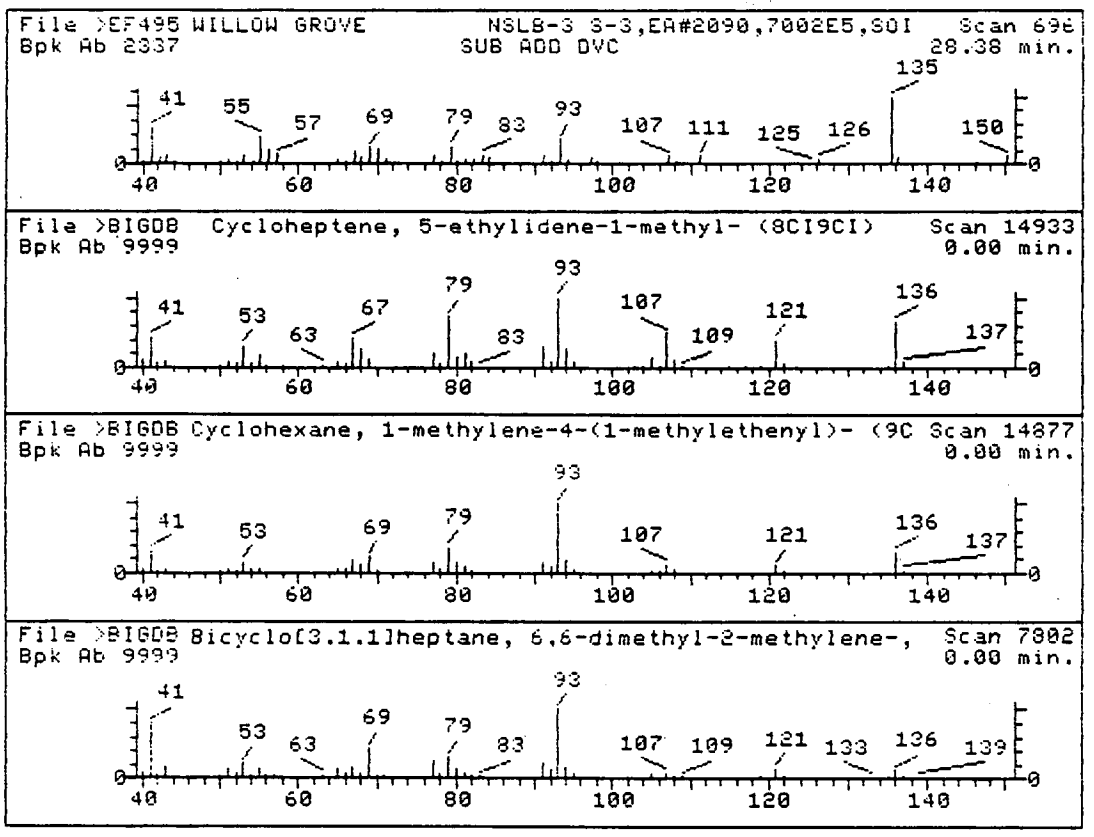
Retention time = 27.33 UNKNOWN C9H18

Area = 284383.0 Tentative Concentration is 40.00

1.	Cyclopentane, 1-methyl-3-(1-methylethyl)- (9CI)	126 C9H18
2.	Cyclohexane, (1-methylethyl)- (9CI)	126 C9H18
3.	1-Azabicyclo[3.1.0]hexane (8CI9CI)	83 C5H9N
4.	2-Octenal, (E)- (8CI9CI)	126 C8H14O
5.	Cycloheptanone, 3-methyl-, (R)- (9CI)	126 C8H14O
6.	2-Hexanone, 3-methyl-4-methylene- (8CI)	126 C8H14O
7.	3-Hexen-2-one, 3,4-dimethyl-, (E)- (8CI)	126 C8H14O

Sample file: >EF495 Spectrum #: 669
Search speed: 2 Tilting option: S No. of ion ranges searched: 53

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	30*	53771883	5383	"BIGDB	45	57	1	0	68	50	10	23
2.	26*	696297	5414	"BIGDB	24	79	1	0	53	44	8	14
3.	20*	285767	5336	"BIGDB	23	56	2	0	100	51	5	13
4.	20*	2548870	3627	"BIGDB	39	81	3	0	69	52	5	13
5.	15*	13609580	5416	"BIGDB	34	81	3	0	73	57	3	13
6.	11*	20690715	5607	"BIGDB	24	49	3	0	377	65	2	12
7.	11*	20685465	13200	"BIGDB	26	72	3	0	131	62	2	13



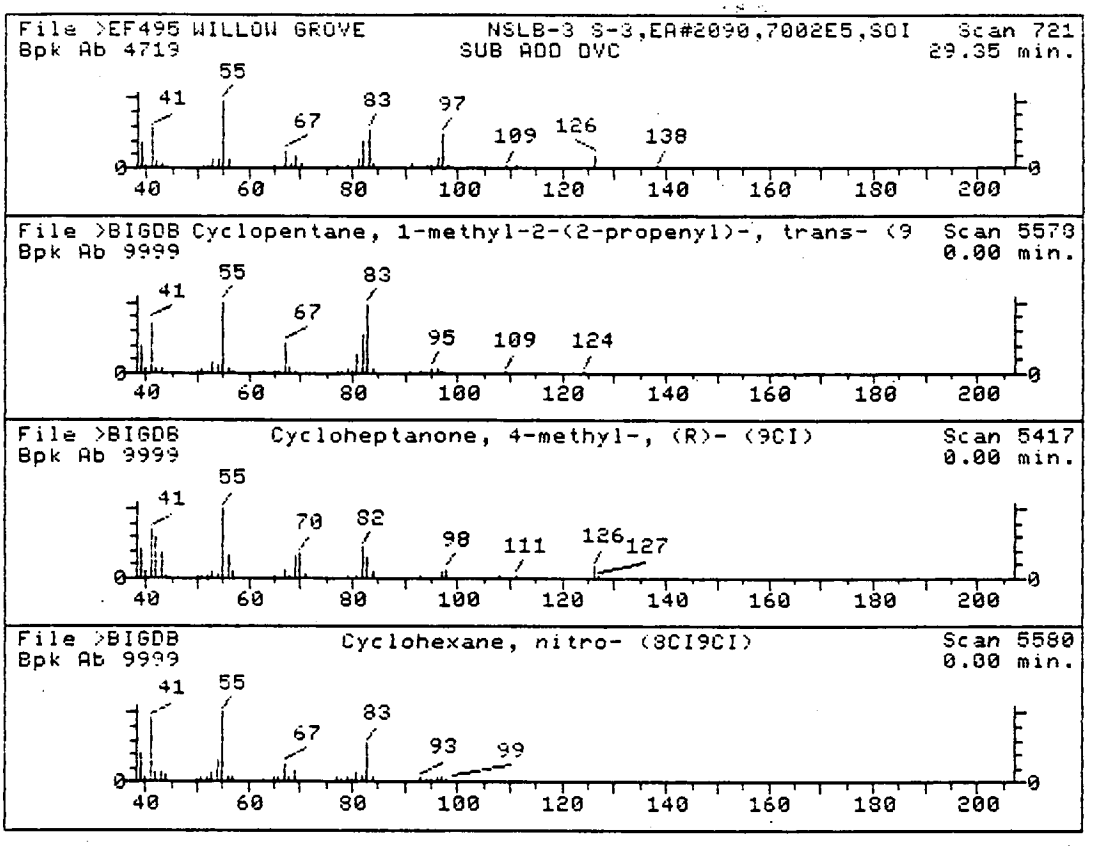
Retention time = 28.38 UNKNOWN C10H16

Area = 495076.0 Tentative Concentration is 70.00

1. Cycloheptene, 5-ethylidene-1-methyl- (8CI9CI) 136 C10H16
2. Cyclohexane, 1-methylene-4-(1-methylethenyl)- (9CI) 136 C10H16
3. Bicyclo[3.1.1]heptane, 6,6-dimethyl-2-methylene-, (1 S)- (9CI) 136 C10H16
4. Tricyclo[3.3.1.13,7]decane, 1-nitro- (9CI) 181 C10H15NO2
5. Bicyclo[3.1.0]hex-2-ene, 4-methyl-1-(1-methylethyl)- (9CI) 136 C10H16
6. Bicyclo[2.2.1]heptane, 2,2-dimethyl-3-methylene-, (1 R)- (9CI) 136 C10H16
7. Camphene (DOT)(8CI) 136 C10H16

Sample file: >EF495 Spectrum #: 696
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	63*	15402945	14933	"BIGDB	70	24	3	4	14	17	30	38
2.	53*	499978	14877	"BIGDB	50	45	2	2	27	25	22	25
3.	45*	18172673	7802	"BIGDB	53	43	2	2	27	33	16	28
4.	40	7575828	14691	"BIGDB	53	54	0	0	83	35	16	23
5.	40*	28634891	7803	"BIGDB	42	35	1	1	32	29	14	17



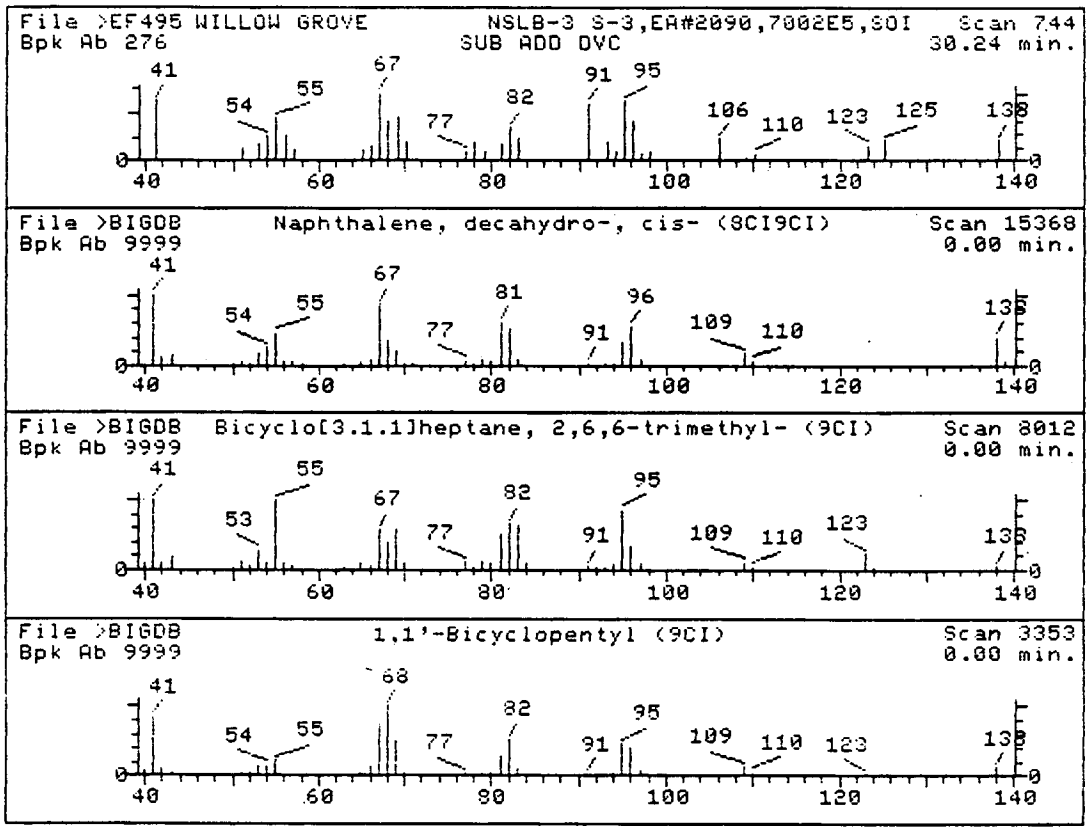
Retention time = 29.35 UNKNOWN

Area = 765331.0 Tentative Concentration is 110.00

1.	Cyclopentane, 1-methyl-2-(2-propenyl)-, trans- (9CI)	124	C9H16
2.	Cycloheptanone, 4-methyl-, (R)- (9CI)	126	C8H14O
3.	Cyclohexane, nitro- (8CI9CI)	129	C6H11NO2
4.	Cyclopentane, 1-methyl-3-(1-methylethyl)- (9CI)	126	C9H18
5.	Cyclohexane, propyl- (8CI9CI)	126	C9H18
6.	2-Hexenal, 2-ethyl- (8CI9CI)	126	C8H14O
7.	Cyclooctane, ethenyl- (9CI)	138	C10H18

Sample file: >EF495 Spectrum #: 721
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	27	50746537	5578	"BIGDB	42	44	1	0	50	43	8	15
2.	27*	13609591	5417	"BIGDB	36	75	3	0	89	40	10	13
3.	25	1122607	5580	"BIGDB	57	45	2	0	98	47	7	14
4.	24*	53771883	5383	"BIGDB	50	52	2	0	58	54	7	23
5.	20*	1678928	5625	"BIGDB	34	63	1	0	57	52	5	18
6.	15*	645625	13177	"BIGDB	41	66	2	1	78	56	3	12
7.	15*	61142414	821	"BIGDB	27	94	3	0	58	58	3	13



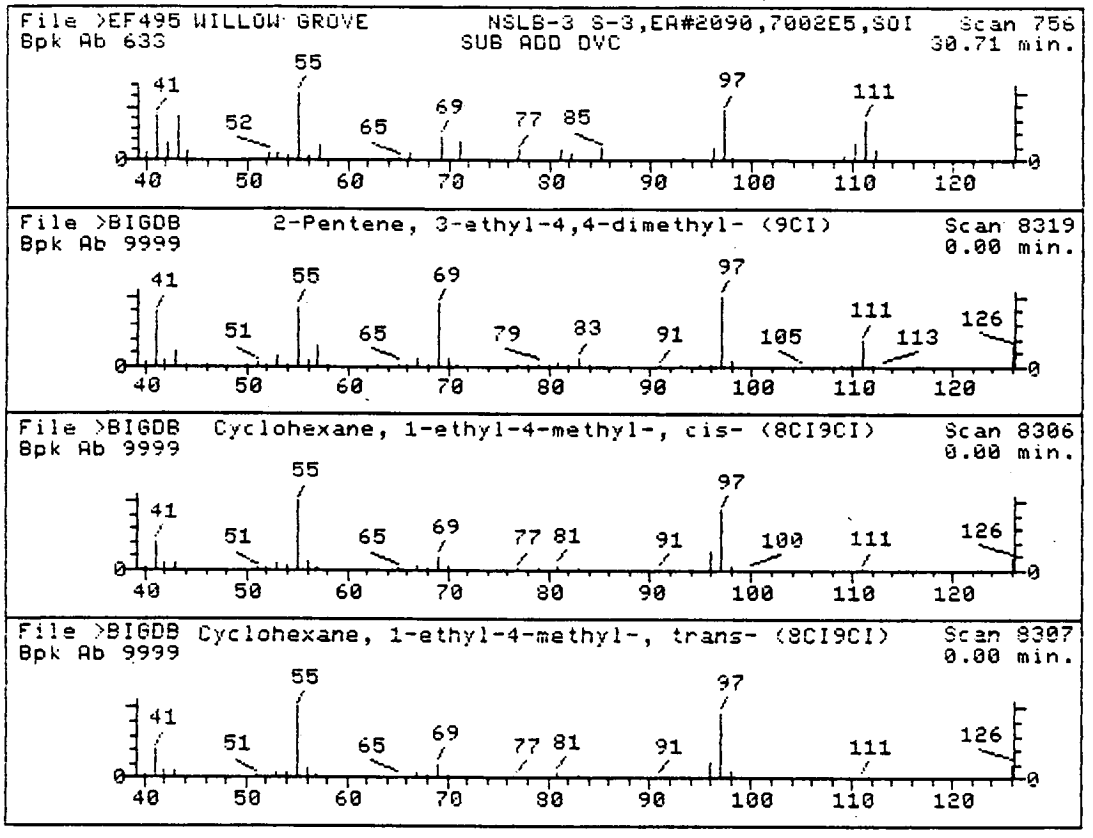
Retention time = 30.24 UNKNOWN C10 H18

Area = 76109.00 Tentative Concentration is 11.00

1. Naphthalene, decahydro-, cis- (8CI9CI) 138 C10H18
2. Bicyclo[3.1.1]heptane, 2,6,6-trimethyl- (9CI) 138 C10H18
3. 1,1'-Bicyclopentyl (9CI) 138 C10H18
4. Cyclopentane, 1,2-dimethyl-3-(1-methylethenyl)- (9CI 138 C10H18
5. Cyclohexane, 1-methyl-4-(1-methylethenyl)-, trans- (9CI) 138 C10H18
6. Cyclohexene, 1-methyl-4-(1-methylethyl)- (9CI) 138 C10H18
7. Cyclopentane, pentylidene- (9CI) 138 C10H18

Sample file: >EF495 Spectrum #: 744
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	45*	493016	15368	"BIGDB	57	61	2	0	77	39	17	34
2.	44*	473552	8012	"BIGDB	56	66	2	0	74	39	17	33
3.	41*	1636391	3353	"BIGDB	61	57	3	0	133	37	14	28
4.	36*	6983035	3354	"BIGDB	56	64	3	0	95	33	12	19
5.	35*	1124250	3351	"BIGDB	55	66	3	0	78	35	12	18
6.	30*	5502885	15334	"BIGDB	40	75	1	0	86	41	12	21
7.	28*	53366555	15341	"BIGDB	30	75	1	0	72	31	15	16



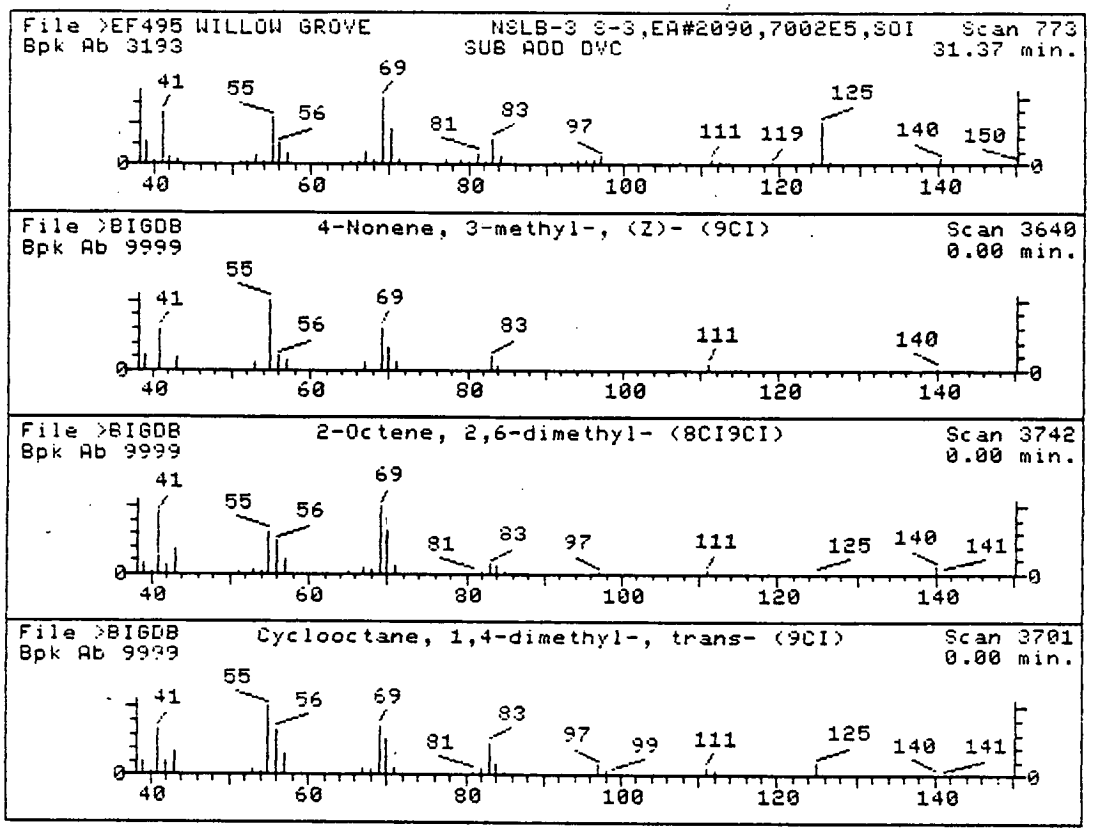
Retention time = 30.71 UNKNOWN C9H18

Area = 116687.0 Tentative Concentration is 17.00

1.	2-Pentene, 3-ethyl-4,4-dimethyl- (9CI)	126	C9H18
2.	Cyclohexane, 1-ethyl-4-methyl-, cis- (8CI9CI)	126	C9H18
3.	Cyclohexane, 1-ethyl-4-methyl-, trans- (8CI9CI)	126	C9H18
4.	Cyclohexane, 1-ethyl-1-methyl- (8CI9CI)	126	C9H18
5.	Pyrrolidine, 1-(1-propenyl)- (9CI)	111	C7H13N
6.	2-Pentene, 3,4,4-trimethyl- (8CI9CI)	112	C8H16
7.	1H-1,2,4-Triazole, 1-ethyl- (8CI9CI)	97	C4H7N3

Sample file: >EF495 Spectrum #: 756
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	25*	53907598	8319	"BIGDB	24	85	3	0	73	47	7	12
2.	20*	4926787	8306	"BIGDB	35	61	2	0	75	53	5	15
3.	20*	6236880	8307	"BIGDB	35	61	2	0	79	53	5	15
4.	20*	4926903	8248	"BIGDB	27	64	2	0	73	55	5	14
5.	20*	13937887	10634	"BIGDB	25	98	3	0	59	52	5	13
6.	15*	598969	8258	"BIGDB	34	61	2	0	60	60	3	15
7.	15*	16778704	8219	"BIGDB	34	62	2	0	57	58	3	14



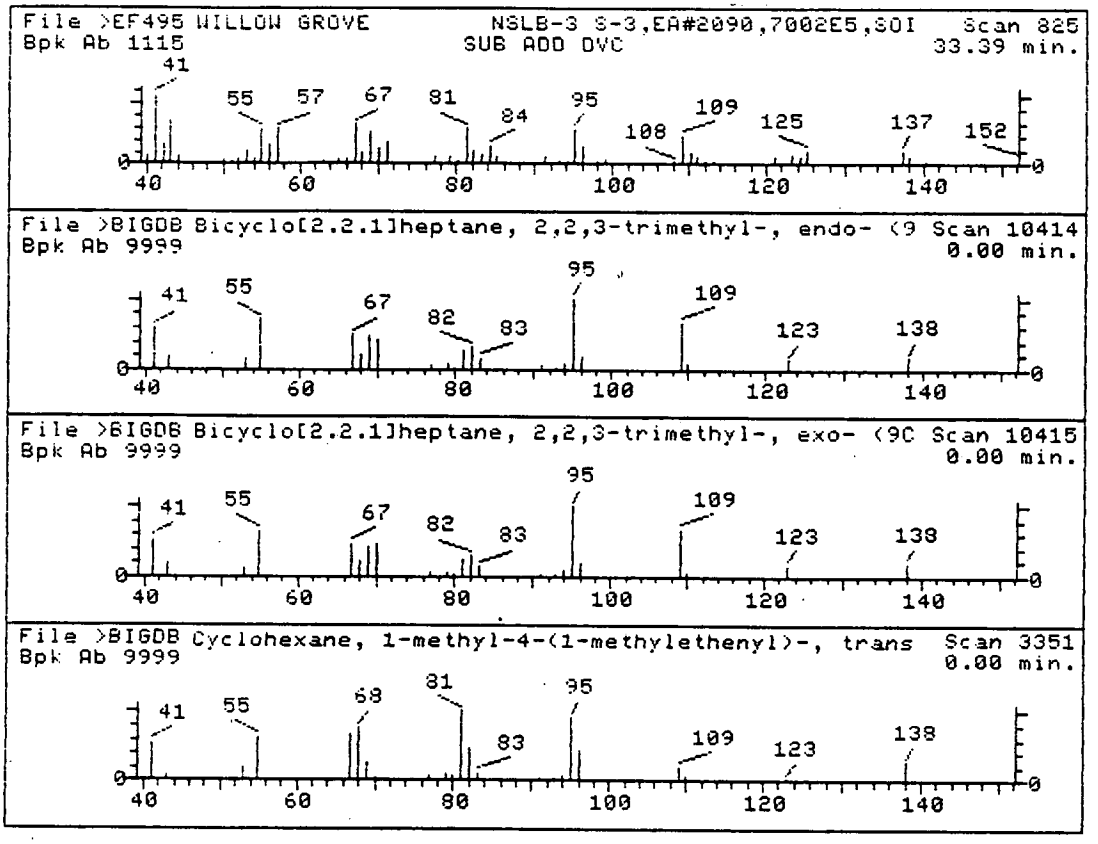
Retention time = 31.37 UNKNOWN C10H20

Area = 658905.0 Tentative Concentration is 93.00

1.	4-Nonene, 3-methyl-, (Z)- (9CI)	140 C10H20
2.	2-Octene, 2,6-dimethyl- (8CI9CI)	140 C10H20
3.	Cyclooctane, 1,4-dimethyl-, trans- (9CI)	140 C10H20
4.	2-Octene, 4-ethyl-, (E)- (9CI)	140 C10H20
5.	Cyclohexane, 1,1'-(1-methylethylidene)bis- (9CI)	208 C15H28
6.	3-Hexene, 2,2,5,5-tetramethyl-, (Z)- (8CI9CI)	140 C10H20
7.	1-Hexene, 3,3,5-trimethyl- (9CI)	126 C9H18

Sample file: >EF495 Spectrum #: 773 No. of ion ranges searched: 47
Search speed: 2 Tilting option: S

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	51*	63830693	3640	"BIGDB	58	43	2	0	125	32	20	35
2.	40*	4057425	3742	"BIGDB	41	63	0	0	57	50	12	43
3.	35*	13151989	3701	"BIGDB	54	55	2	0	60	47	11	31
4.	31*	74630094	3764	"BIGDB	25	64	2	0	128	35	12	14
5.	31	54934906	12992	"BIGDB	65	60	2	0	77	33	12	14
6.	30*	692477	3700	"BIGDB	42	63	1	0	45	41	12	21
7.	30*	13427435	3548	"BIGDB	31	62	0	0	78	48	10	24



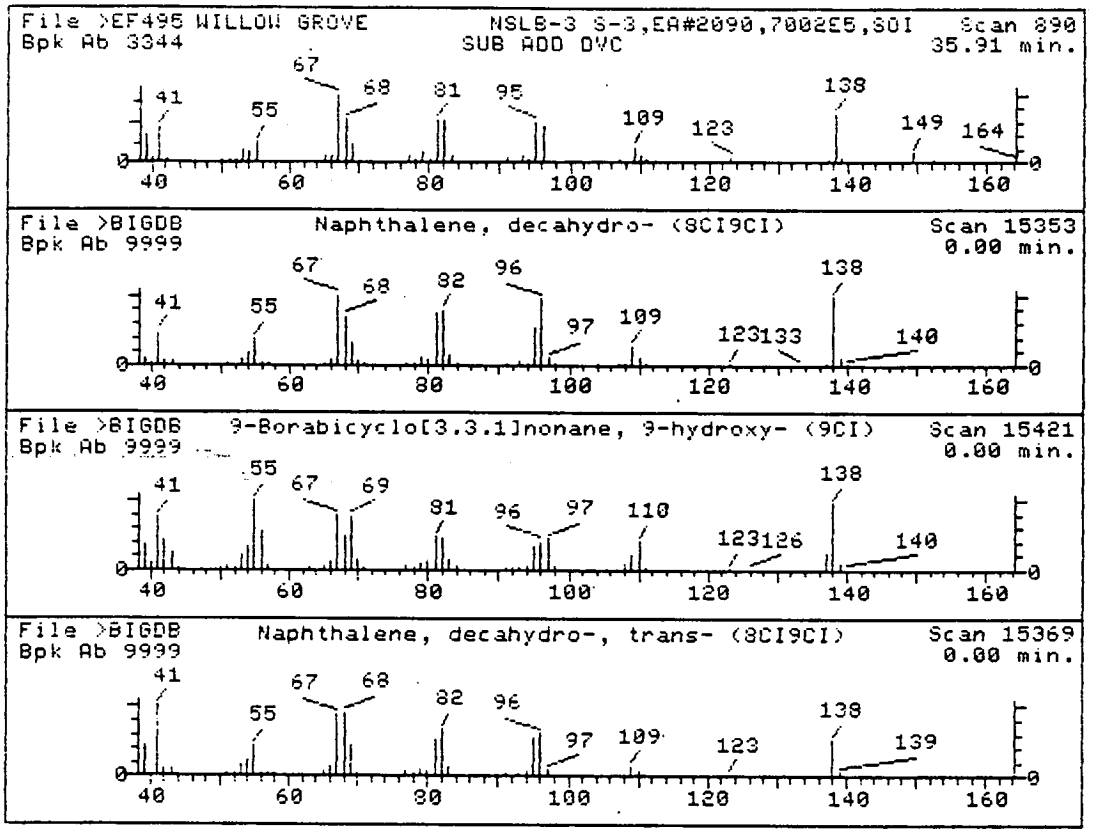
Retention time = 33.39 UNKNOWN C10H18

Area = 399111.0 Tentative Concentration is 57.00

1. Bicyclo[2.2.1]heptane, 2,2,3-trimethyl-, endo- (9CI) 138 C10H18
2. Bicyclo[2.2.1]heptane, 2,2,3-trimethyl-, exo- (9CI) 138 C10H18
3. Cyclohexane, 1-methyl-4-(1-methylethenyl)-, trans- (9CI) 138 C10H18
4. Cyclohexane, butylidene- (8CI9CI) 138 C10H18
5. 1,1'-Bicyclopentyl (9CI) 138 C10H18
6. 2(3H)-Benzofuranone, hexahydro-3-methylene- (9CI) 152 C9H12O2
7. Cyclopentane, (2-methylpropylidene)- (9CI) 124 C9H16

Sample file: >EF495 Spectrum #: 825
Search speed: 2 Tilting option: S No. of ion ranges searched: 64

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	55*	20536407	10414	"BIGDB	62	56	1	0	51	41	18	60
2.	36*	20536418	10415	"BIGDB	48	56	1	0	48	41	12	27
3.	23*	1124250	3351	"BIGDB	56	50	1	0	41	60	6	44
4.	20*	2272039	15328	"BIGDB	44	64	2	0	51	52	5	14
5.	20*	1636391	3353	"BIGDB	37	81	3	0	77	52	5	13
6.	20*	53387385	12850	"BIGDB	35	110	3	0	59	54	5	13
7.	18*	53366588	10392	"BIGDB	53	54	0	0	57	65	5	65



Retention time = 35.91

Area = 2453827. Tentative Concentration is 350.00

1.	Naphthalene, decahydro- (8CI9CI)	138	C10H18
2.	9-Borabicyclo[3.3.1]nonane, 9-hydroxy- (9CI)	138	C8H15BO
3.	Naphthalene, decahydro-, trans- (8CI9CI)	138	C10H18
4.	Spiro[4.5]decane (8CI9CI)	138	C10H18
5.	1,1'-Bicyclopentyl (9CI)	138	C10H18
6.	Spiro[4.4]nonan-2-one (8CI9CI)	138	C9H14O
7.	Cyclohexane, 1-methyl-3-(1-methylethylidene)- (9CI)	138	C10H18

Sample file: >EF495 Spectrum #: 890
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	81*	91178	15353	"BIGDB	105	22	2	1	82	20	45	71
2.	67*	63366654	15421	"BIGDB	63	74	3	2	103	15	34	24
3.	53*	493027	15369	"BIGDB	56	66	2	0	70	26	24	33
4.	49*	176636	15365	"BIGDB	69	55	1	1	57	47	13	59
5.	42*	1636391	3353	"BIGDB	56	62	3	0	119	29	14	19
6.	42*	34177189	15410	"BIGDB	38	93	3	0	96	23	17	13
7.	36*	13828347	15393	"BIGDB	30	74	3	0	264	29	14	13

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB4S4

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2092

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF503

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 15. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	17.	
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xyl ne (total)	6.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB4S4

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2092

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF503

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 15. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	None found			
2.				
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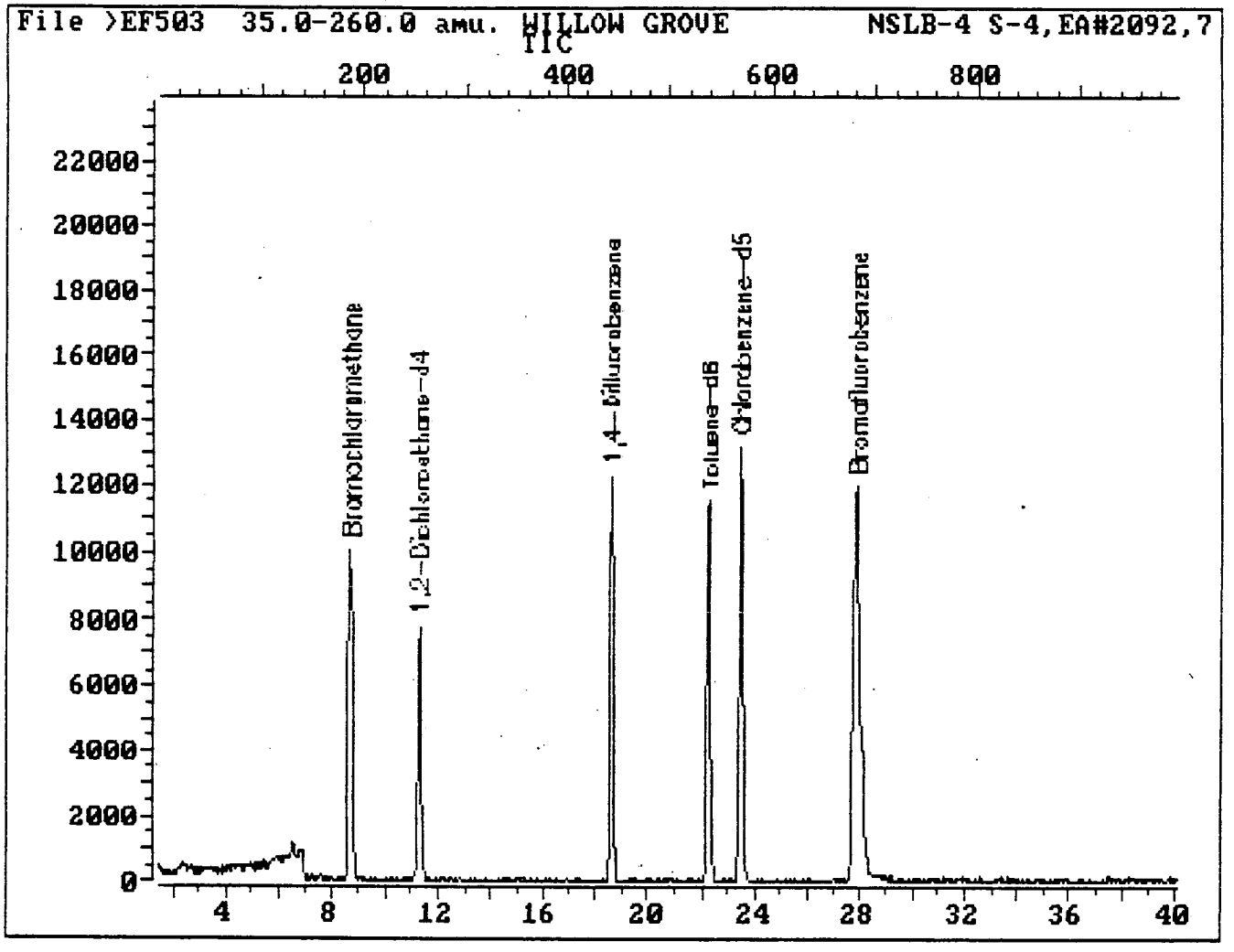
TOTAL ION CHROMATOGRAM



Data File: >EF503::D2 Quant Output File: ^EF503::QT
Name: WILLOW GROVE
Misc: NSLB-4 S-4,EA#2092,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:17

Operator ID: CARL
Quant Time: 890508 11:03
Injected at: 890508 10:21

QUANT REPORT

Operator ID: CARL
Output File: ^EF503::QT
Data File: >EF503::D2
Name: WILLOW GROVE
Misc: NSLB-4 S-4,EA#2092,7002E5,SOIL,5.0GM

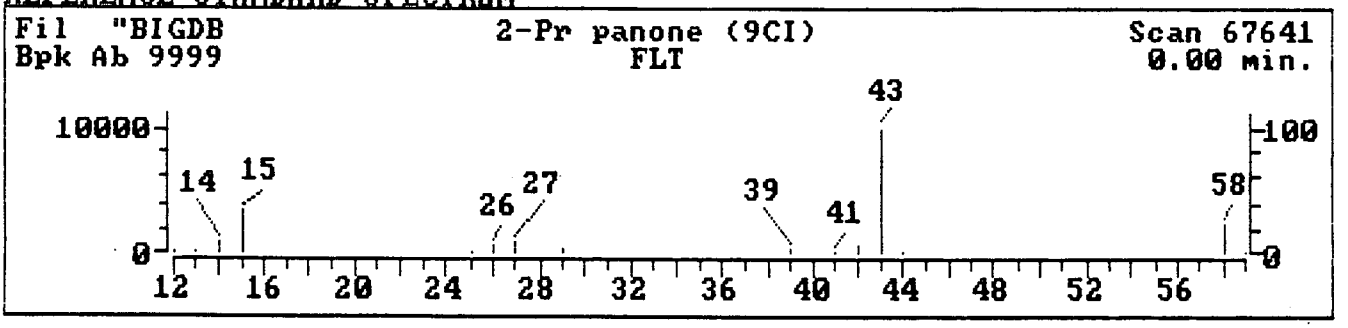
Quant Rev: 6
Quant Time: 890508 11:03
Injected at: 890508 10:21
Dilution Factor: 1.00000

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:17

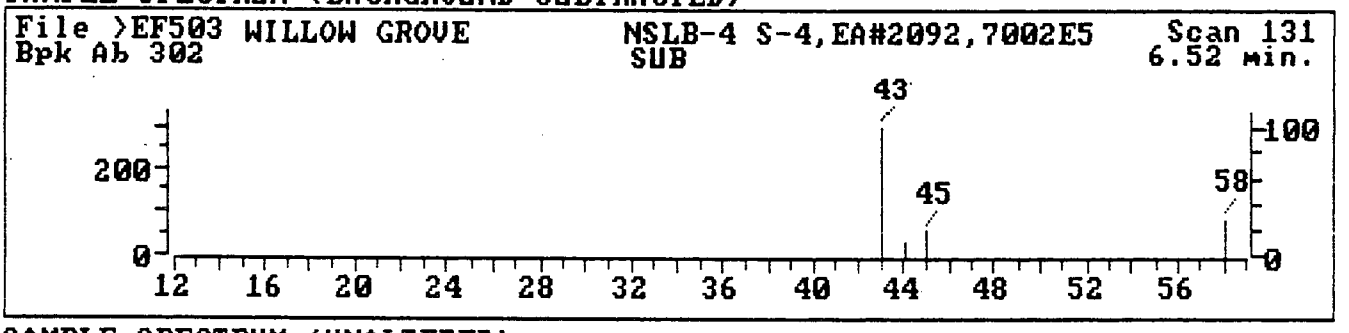
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.69	128.0	13391	50.00	UG/KG	86
7)	Acetone	6.52	43.0	3030	14.43	UG/KG	93
13)	1,2-Dichloroethane-d4	11.29	65.0	34138	52.63	UG/KG	79
15)	*1,4-Difluorobenzene	18.61	114.0	47281	50.00	UG/KG	89
29)	*Chlorobenzene-d5	23.50	117.0	42069	50.00	UG/KG	95
35)	Toluene-d8	22.30	98.0	46825	49.17	UG/KG	98
40)	Bromofluorobenzene	27.88	95.0	42793	51.36	UG/KG	80

* Compound is ISTD

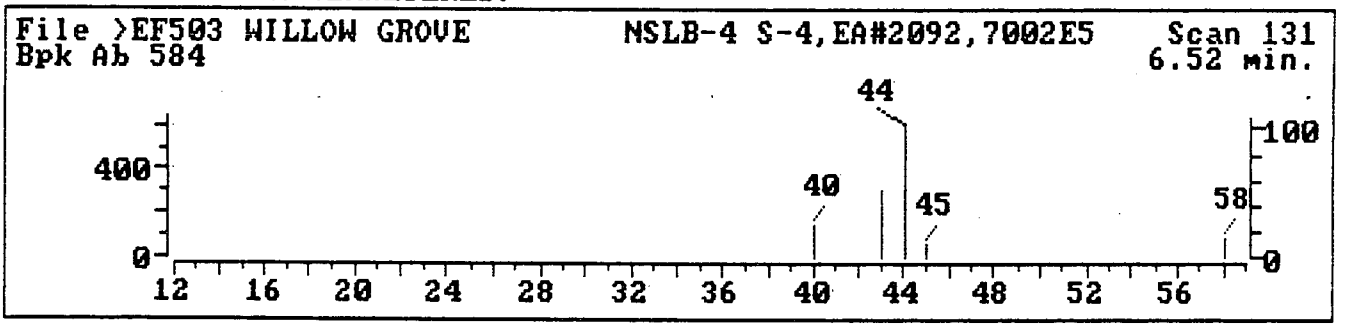
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EF503::D2 Quant Output File: ^EF503::QT
Name: WILLOW GROVE
Misc: NSLB-4 S-4,EA#2092,7002E5,SOIL,5.0GM
Quant Time: 890508 11:03 Quant ID File: EVOAS::BD
Injected at: 890508 10:21 Last Calibration: 890508 09:17

Compound No: 7
Compound Name: Acetone
Scan Number: 131
Retention Time: 6.52 min.
Quant Ion: 43.0
Area: 3030
Concentration: 14.43 UG/KG
q-value: 93

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB5S3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2094

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF504

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 19. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	22.	
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzen	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB5S3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2094

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF504

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 19. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	None found			
2.				
3.				
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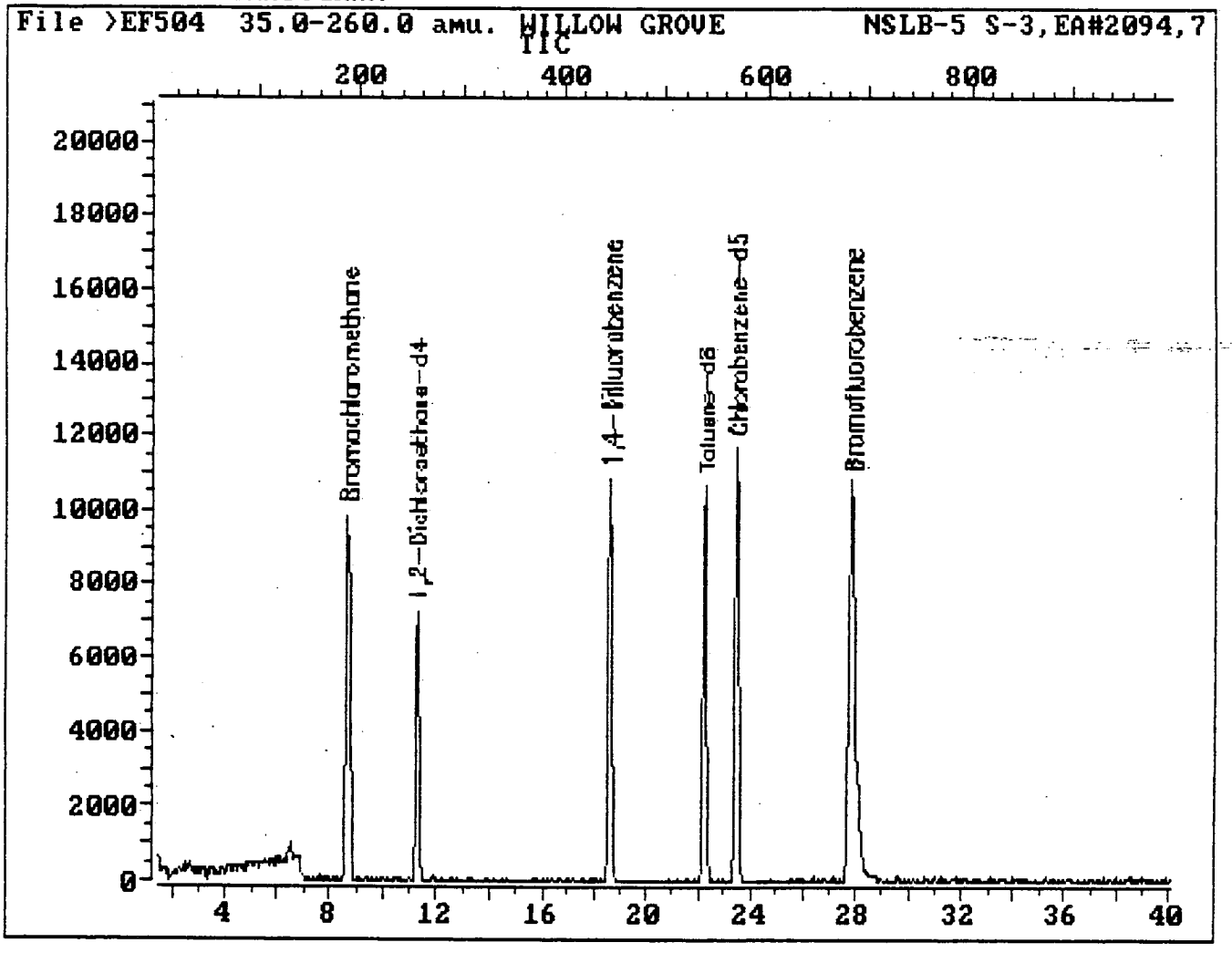
TOTAL ION CHROMATOGRAM



Data File: >EF504::D2 Quant Output File: ^EF504::QT
Name: WILLOW GROVE
Misc: NSLB-5 S-3,EA#2094,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:17

Operator ID: CARL
Quant Time: 890508 11:48
Injected at: 890508 11:07

QUANT REPORT

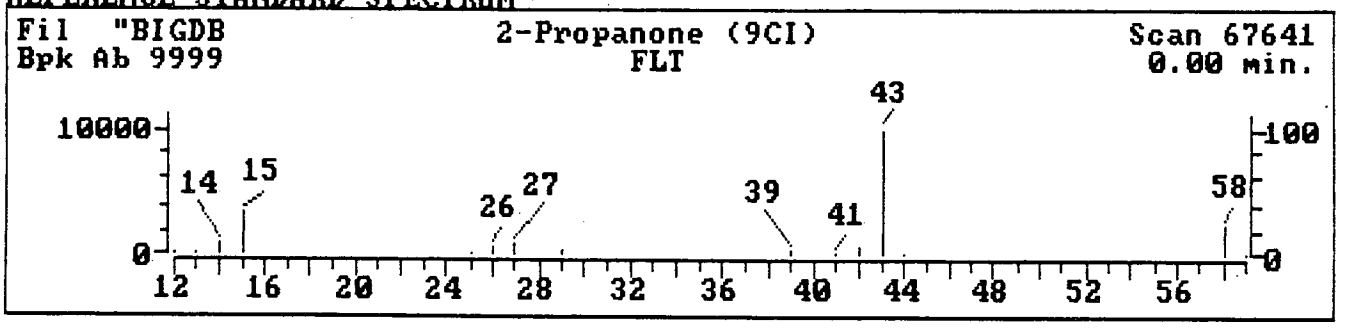
Operator ID: CARL Quant Rev: 6 Quant Tim : 890508 11:48
Output File: ^EF504::QT Inject d at: 890508 11:07
Data File: >EF504::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: NSLB-5 S-3,EA#2094,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:17

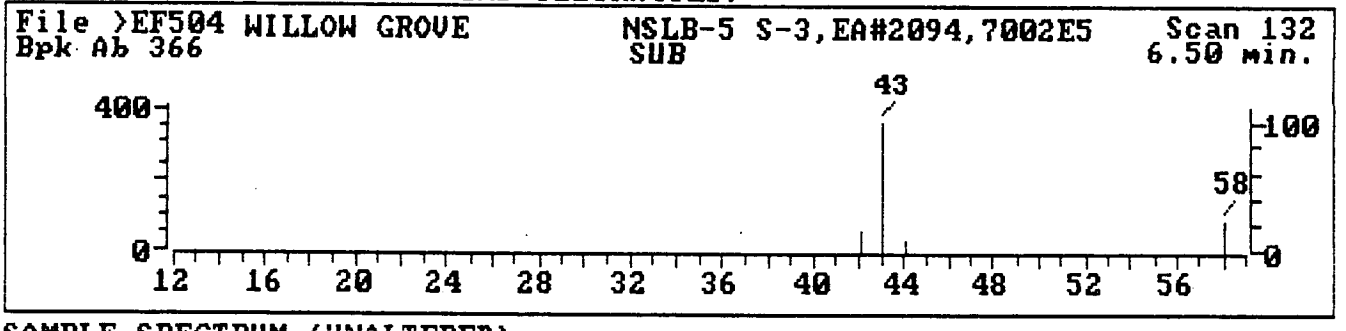
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.67	128.0	12196	50.00	UG/KG	82
7)	Acetone	6.50	43.0	3365	17.60	UG/KG	96
13)	1,2-Dichloroethane-d4	11.27	65.0	32460	54.95	UG/KG	77
15)	*1,4-Difluorobenzene	18.63	114.0	42224	50.00	UG/KG	91
29)	*Chlorobenzene-d5	23.48	117.0	34843	50.00	UG/KG	96
35)	Toluene-d8	22.27	98.0	42456	53.83	UG/KG	97
40)	Bromofluorobenzene	27.82	95.0	38612	55.95	UG/KG	80

* Compound is ISTD

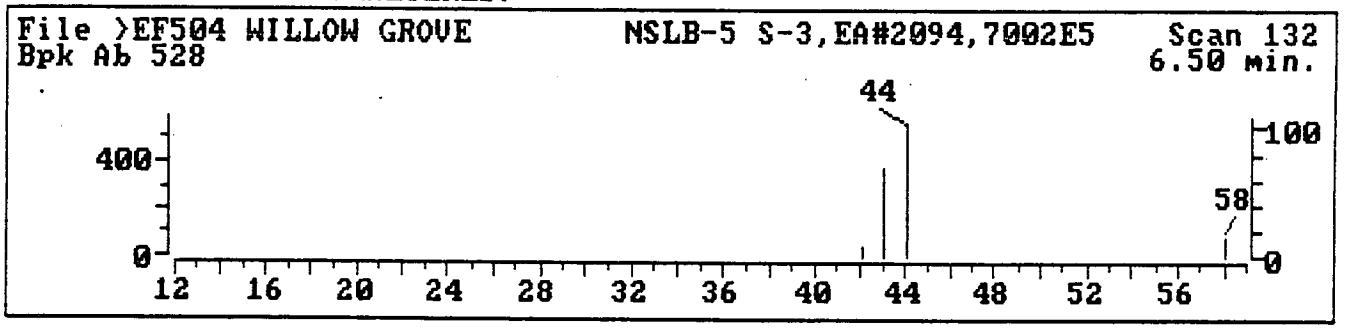
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EF504::D2 Quant Output File: ^EF504::QT
Name: WILLOW GROVE
Misc: NSLB-5 S-3,EA#2094,7002E5,SOIL,5.0GM
Quant Time: 890508 11:48 Quant ID File: EVOAS::BD
Injected at: 890508 11:07 Last Calibration: 890508 09:17

Compound No: 7
Compound Name: Acetone
Scan Number: 132
Retention Time: 6.50 min.
Quant Ion: 43.0
Ar a: 3365
Concentration: 17.60 UG/KG
q-value: 96

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB6S2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2096

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF505

L vel: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 18. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB6S2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2096

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF505

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 18. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	none found			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
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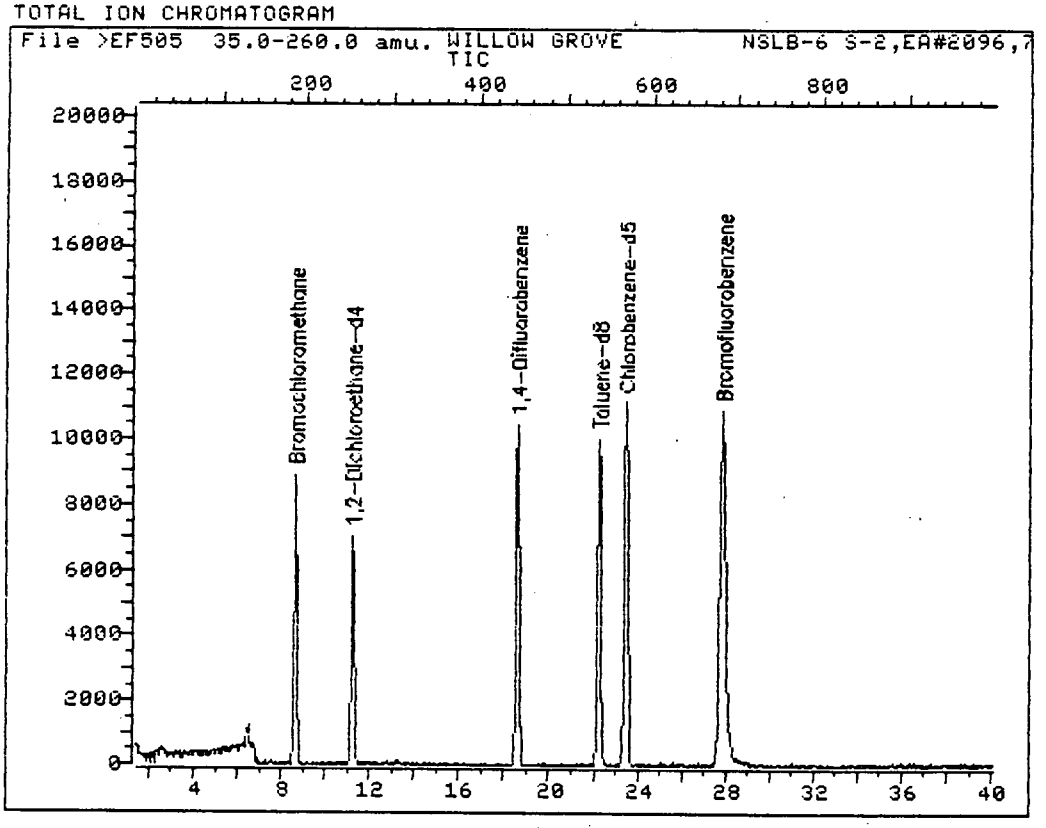
27.				
28.				
29.				
30.				

TOTAL ION CHROMATOGRAM



Data File: >EF505::D2 Quant Output File: ^EF505::QT
Name: WILLOW GROVE
Misc: NSLB-6 S-2,EA#2096,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:17

Operator ID: CARL
Quant Time: 890508 12:34
Injected at: 890508 11:53

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890508 12:34
Output File: ^EF505::QT Injected at: 890508 11:53
Data File: >EF505::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: NSLB-6 S-2,EA#2096,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:17

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	11067	50.00	UG/KG	91
13)	1,2-Dichloroethane-d4	11.25	65.0	30773	57.40	UG/KG	81
15)	*1,4-Difluorobenzene	18.61	114.0	38140	50.00	UG/KG	90
29)	*Chlorobenzene-d5	23.46	117.0	38169	50.00	UG/KG	98
35)	Toluene-d8	22.26	98.0	40418	46.78	UG/KG	99
40)	Bromofluorobenzene	27.84	95.0	37151	49.14	UG/KG	80

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP9SL1

Lab Nam : EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2102

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF521

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 18. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	14.	
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzen	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DUP9SL1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2102

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF521

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 18. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	None found			
2.				
3.				
4.				
5.				
6.				
7.				
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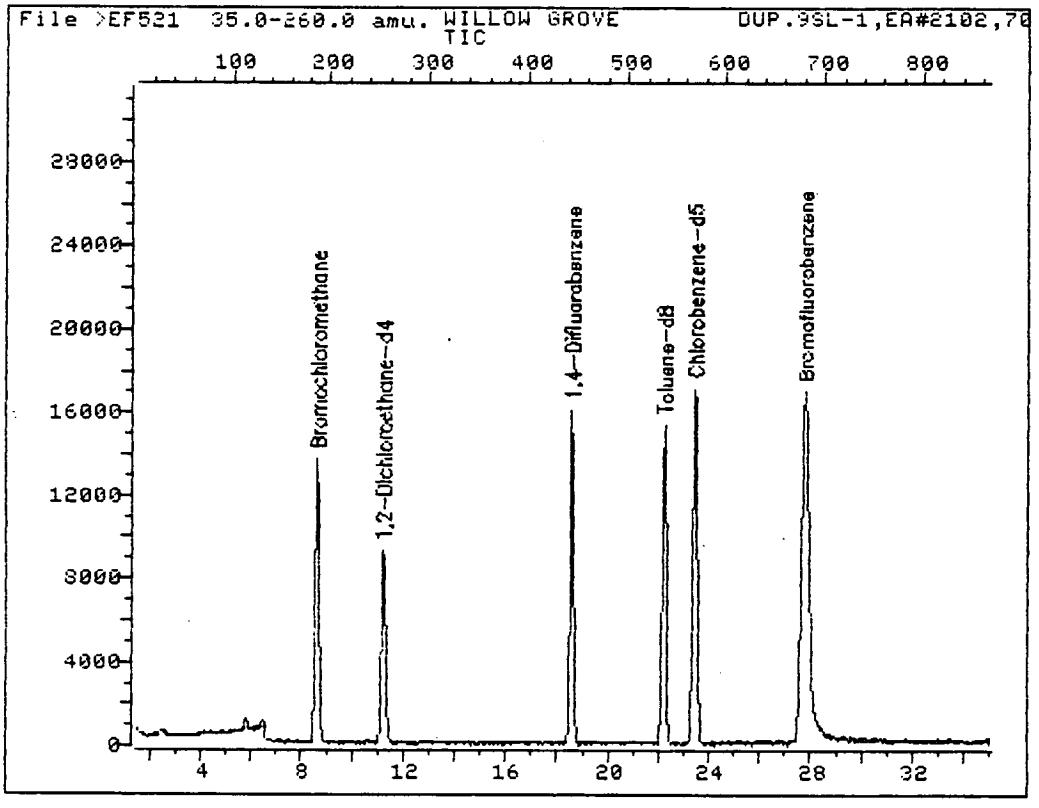
29.				
30.				

TOTAL ION CHROMATOGRAM



Data File: >EF521::D2 Quant Output File: ^EF521::QT
Name: WILLOW GROVE
Misc: DUP.9SL-1,EA#2102,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 16:18
Injected at: 890509 15:42

QUANT REPORT

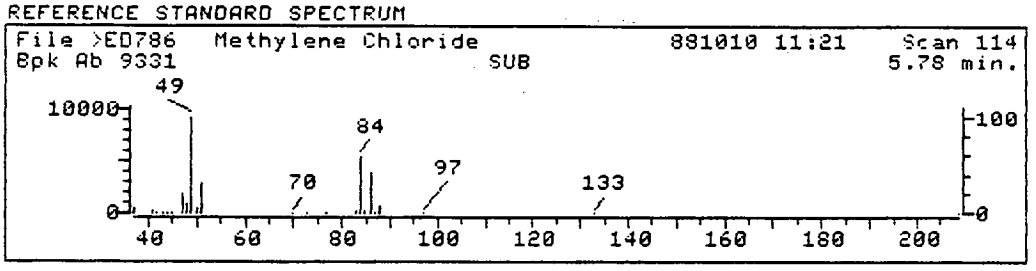
Operator ID: CARL Quant Rev: 6 Quant Time: 890509 16:18
Output File: ^EF521::QT Injected at: 890509 15:42
Data File: >EF521::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: DUP.9SL-1,EA#2102,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Titl : CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

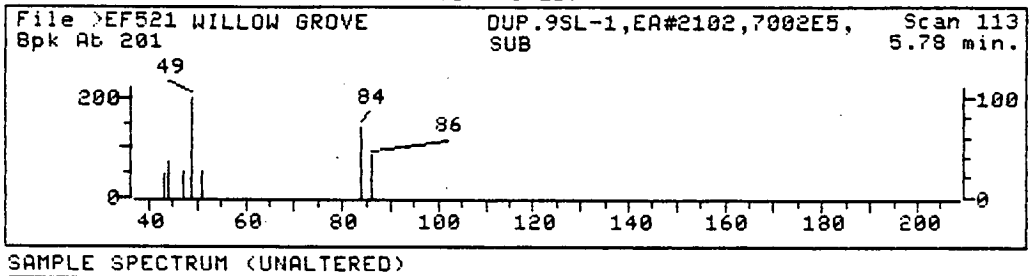
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	18646	50.00	UG/KG	87
6)	Methylene Chloride	5.78	84.0	1016	2.64	UG/KG	91
7)	Acetone	6.44	43.0	2767	11.64	UG/KG	99
13)	1,2-Dichloroethane-d4	11.21	65.0	39031	50.20	UG/KG	83
15)	*1,4-Difluorobenzene	18.58	114.0	63641	50.00	UG/KG	90
29)	*Chlorobenzene-d5	23.43	117.0	56438	50.00	UG/KG	96
35)	Toluene-d8	22.23	98.0	60526	50.22	UG/KG	99
40)	Bromofluorobenzene	27.77	95.0	58046	49.87	UG/KG	91

* Compound is ISTD

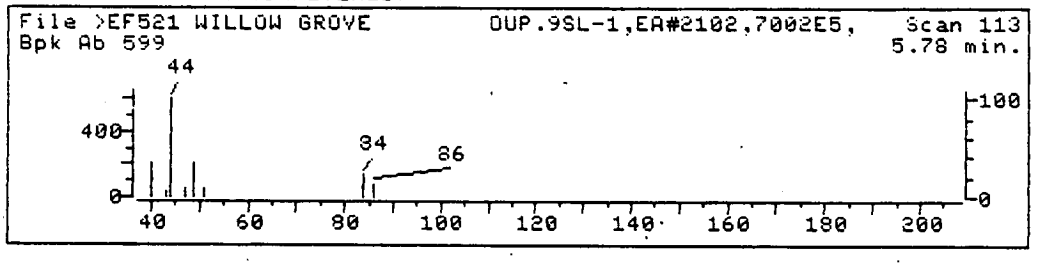
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



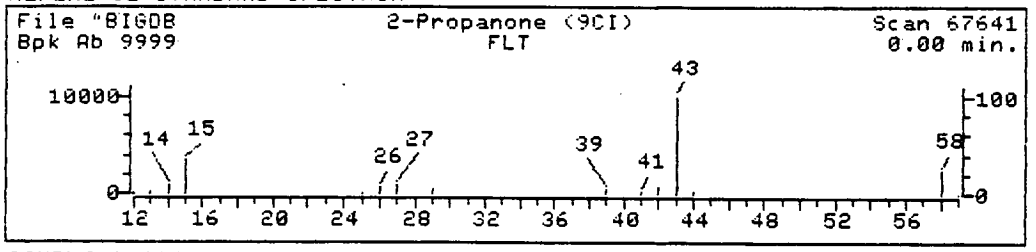
SAMPLE SPECTRUM (UNALTERED)



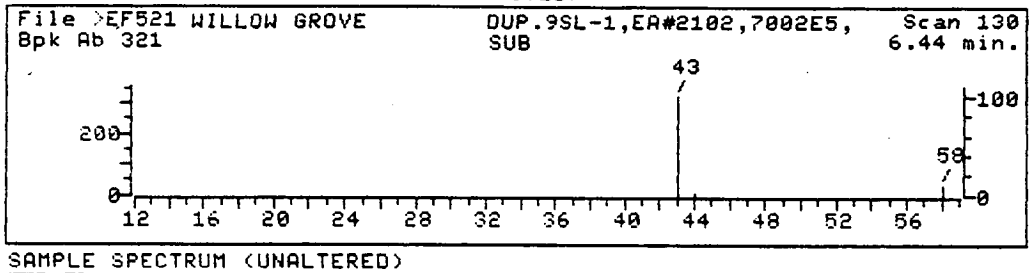
Data File: >EF521::D2 Quant Output File: ^EF521::QT
Name: WILLOW GROVE
Misc: DUP.9SL-1,EA#2102,7002E5,SOIL,5.0GM
Quant Time: 890509 16:18 Quant ID File: EVOAS::BD
Injected at: 890509 15:42 Last Calibration: 890509 13:58

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 113
Retention Time: 5.78 min.
Quant Ion: 84.0
Area: 1016
Concentration: 2.64 UG/KG
q-value: 91

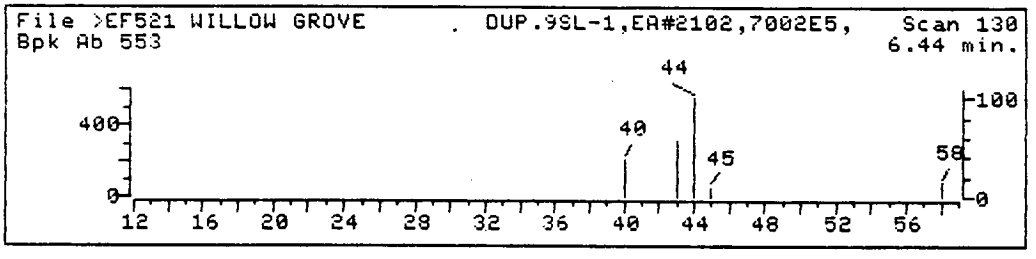
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EF521::D2 Quant Output File: ^EF521::QT
Name: WILLOW GROVE
Misc: DUP.9SL-1,EA#2102,7002E5,SOIL,5.0GM
Quant Time: 890509 16:18 Quant ID File: EVOAS::BD
Injected at: 890509 15:42 Last Calibration: 890509 13:58

Compound No: 7
Compound Name: Acetone
Scan Number: 130
Retention Time: 6.44 min.
Quant Ion: 43.0
Area: 2767
Concentration: 11.64 UG/KG
q-value: 99

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # ~~2103~~ 2104 5h 6-25-8

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF522

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 19. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	22.	
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styren	6.	U
1330-20-7	Xylene (total)	6.	U

FORM I VOA

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DUP

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA #~~2103~~ 2104 5k 5-25

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF522

L vel: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 19. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	None found			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
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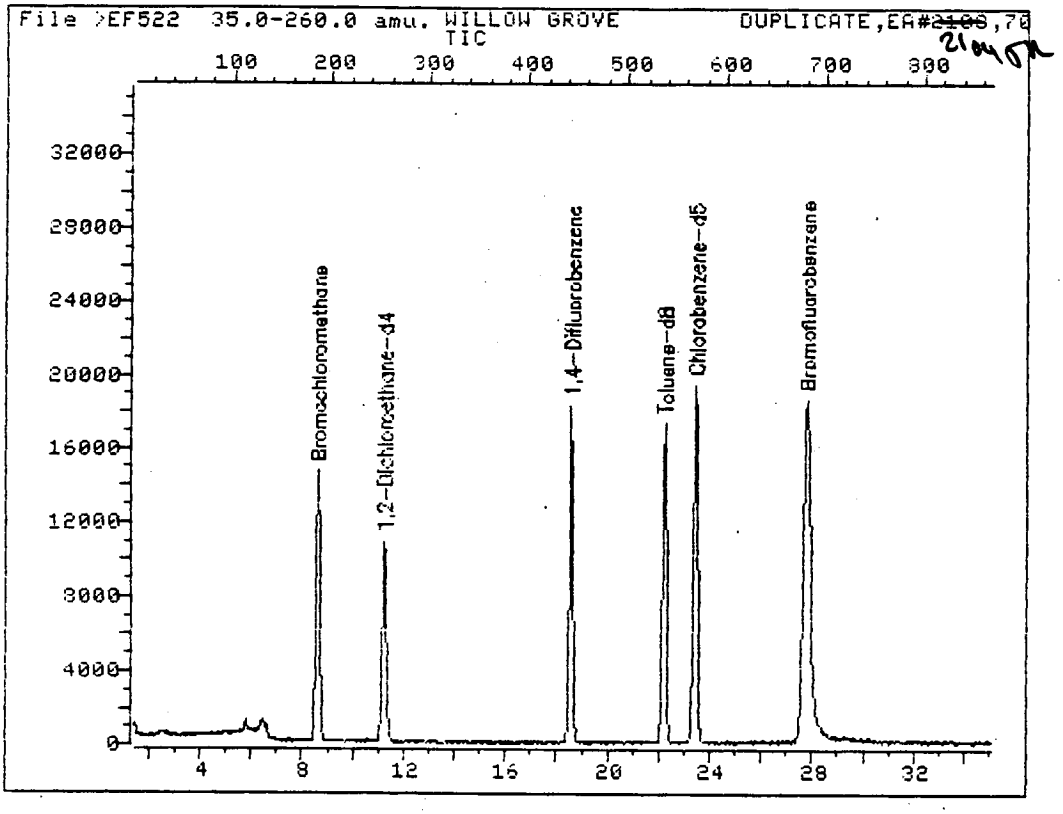
29.				
30.				

TOTAL ION CHROMATOGRAM



Data File: >EF522::D2 Quant Output File: ^EF522::QT
Name: WILLOW GROVE
Misc: DUPLICATE,EA#210~~4~~6R,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 16:58
Injected at: 890509 16:22

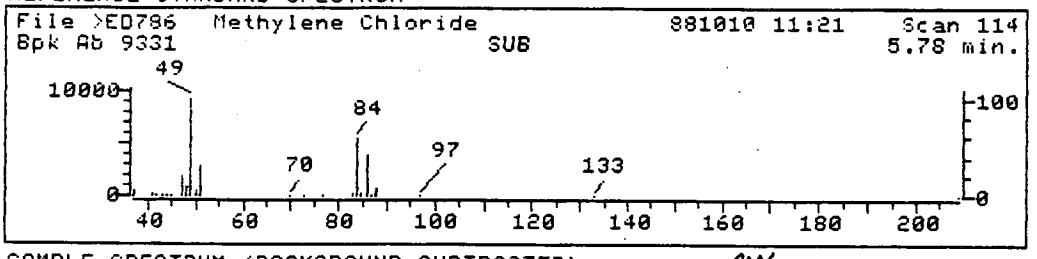
QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890509 16:58
Output File: ^EF522::QT Injected at: 890509 16:22
Data File: >EF522::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: DUPLICATE,EA#~~2103~~,7002E5,SOIL,5.0GM
21046
ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
La t Calibration: 890509 13:58

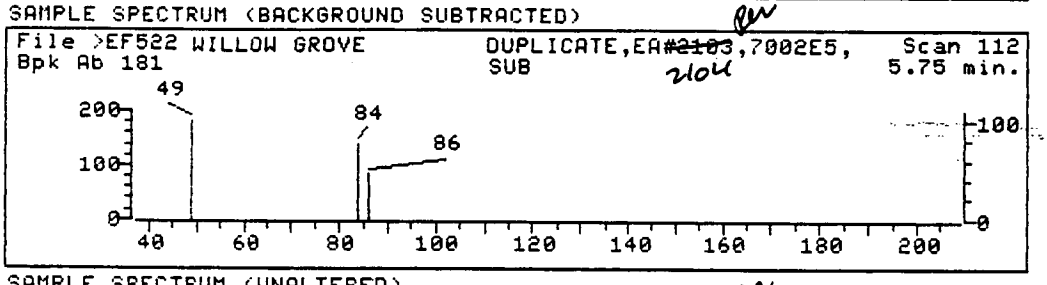
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.62	128.0	20510	50.00	UG/KG	92
6)	Methylene Chloride	5.75	84.0	1012	2.39	UG/KG	96
7)	Acetone	6.44	43.0	4629	17.70	UG/KG	96
13)	1,2-Dichloroethane-d4	11.21	65.0	42518	49.71	UG/KG	85
15)	*1,4-Difluorobenzene	18.58	114.0	72163	50.00	UG/KG	90
29)	*Chlorobenzene-d5	23.43	117.0	62581	50.00	UG/KG	95
35)	Toluene-d8	22.23	98.0	67838	50.76	UG/KG	99
40)	Bromofluorobenzene	27.77	95.0	64439	49.93	UG/KG	88

* Compound is ISTD

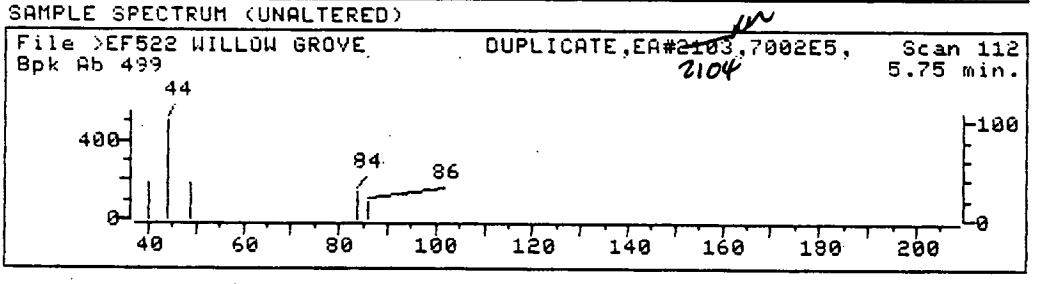
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



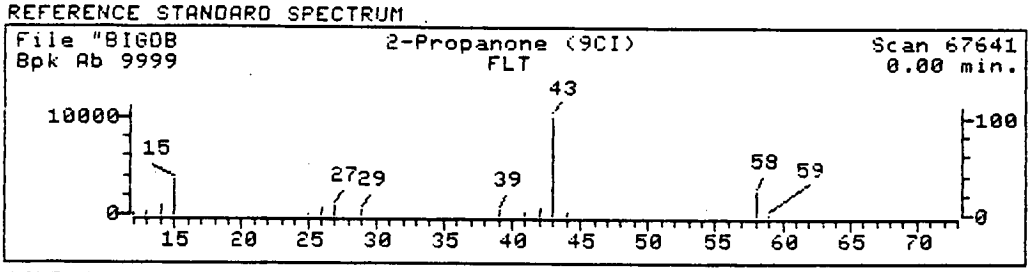
SAMPLE SPECTRUM (UNALTERED)



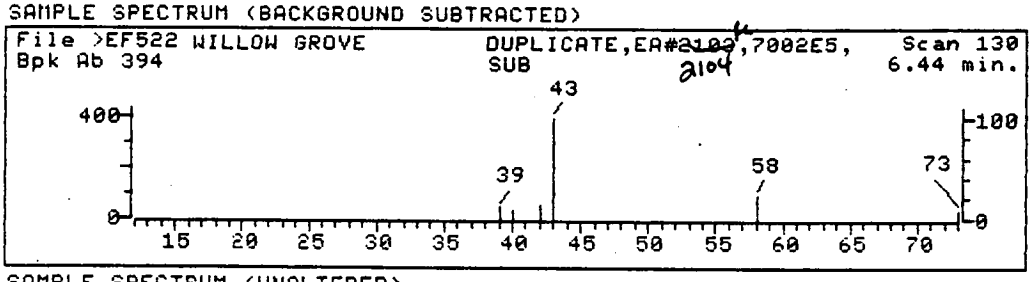
Data File: >EF522::D2 Quant Output File: ^EF522::QT
Name: WILLOW GROVE 2104 RK
Misc: DUPLICATE,EA#~~2103~~,7002E5,SOIL,5.0GM
Quant Time: 890509 16:58 Quant ID File: EVOAS::BD
Injected at: 890509 16:22 Last Calibration: 890509 13:58

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 112
Retention Time: 5.75 min.
Quant Ion: 84.0
Area: 1012
Concentration: 2.39 UG/KG
q-value: 96

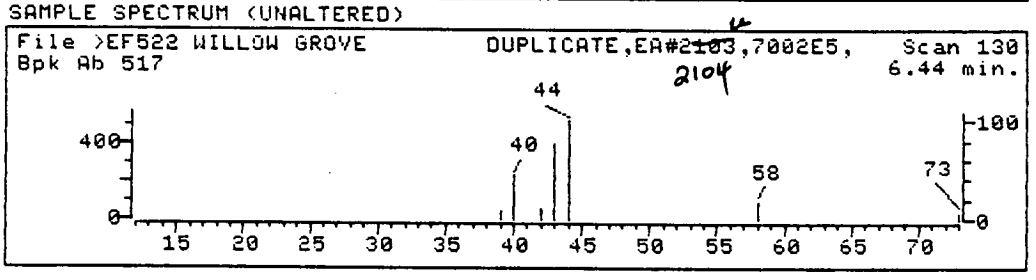
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EF522::D2 Quant Output File: ^EF522::QT
Name: WILLOW GROVE 2104 FK
Misc: DUPLICATE,EA#~~2103~~,7002E5,SOIL,5.0GM
Quant Time: 890509 16:58 Quant ID File: EVOAS::BD
Injected at: 890509 16:22 Last Calibration: 890509 13:58

Compound No: 7
Compound Name: Acetone
Scan Number: 130
Retention Time: 6.44 min.
Quant Ion: 43.0
Area: 4629
Concentration: 17.70 UG/KG
q-value: 96

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAB1S2 DL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # 210S

Sample wt/vol: 1.0 ~~5.0~~ (g/mL) G Lab File ID: EF525

L vel: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 16. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	59.	U
74-83-9	Bromomethane	59.	U
75-01-4	Vinyl Chloride	59.	U
75-00-3	Chloroethane	59.	U
75-09-2	Methylene Chloride	23.	J
67-64-1	Acetone	210.	
75-15-0	Carbon Disulfide	30.	U
75-35-4	1,1-Dichloroethene	36.	
75-34-3	1,1-Dichloroethane	260.	
540-59-0	1,2-Dichloroethene (total)	580.	
67-66-3	Chloroform	30.	U
107-06-2	1,2-Dichloroethane	30.	U
78-93-3	2-Butanone	59.	U
71-55-6	1,1,1-Trichloroethane	5700.	E
56-23-5	Carbon Tetrachloride	30.	U
108-05-4	Vinyl Acetate	59.	U
75-27-4	Bromodichloromethane	30.	U
78-87-5	1,2-Dichloropropane	30.	U
10061-01-5	cis-1,3-Dichloropropene	30.	U
79-01-6	Trichloroethene	2000.	E
124-48-1	Dibromochloromethane	30.	U
79-00-5	1,1,2-Trichloroethane	68.	
71-43-2	Benzene	30.	U
10061-02-6	trans-1,3-Dichloropropene	30.	U
75-25-2	Bromoform	30.	U
108-10-1	4-Methyl-2-Pentanone	59.	U
591-78-6	2-Hexanone	59.	U
127-18-4	Tetrachloroethene	1000.	
79-34-5	1,1,2,2-Tetrachloroethane	30.	U
108-88-3	Toluene	120.	
108-90-7	Chlorobenzene	30.	U
100-41-4	Ethylbenzen	58.	
100-42-5	Styrene	30.	U
1330-20-7	Xylene (total)	410.	

FORM I VOA 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAB1S2 DL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2105

Sample wt/vol: 1.0 ~~5.0~~ (g/mL) G Lab File ID: EF525

Lev l: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 16. Date Analyzed: 5/ 9/89

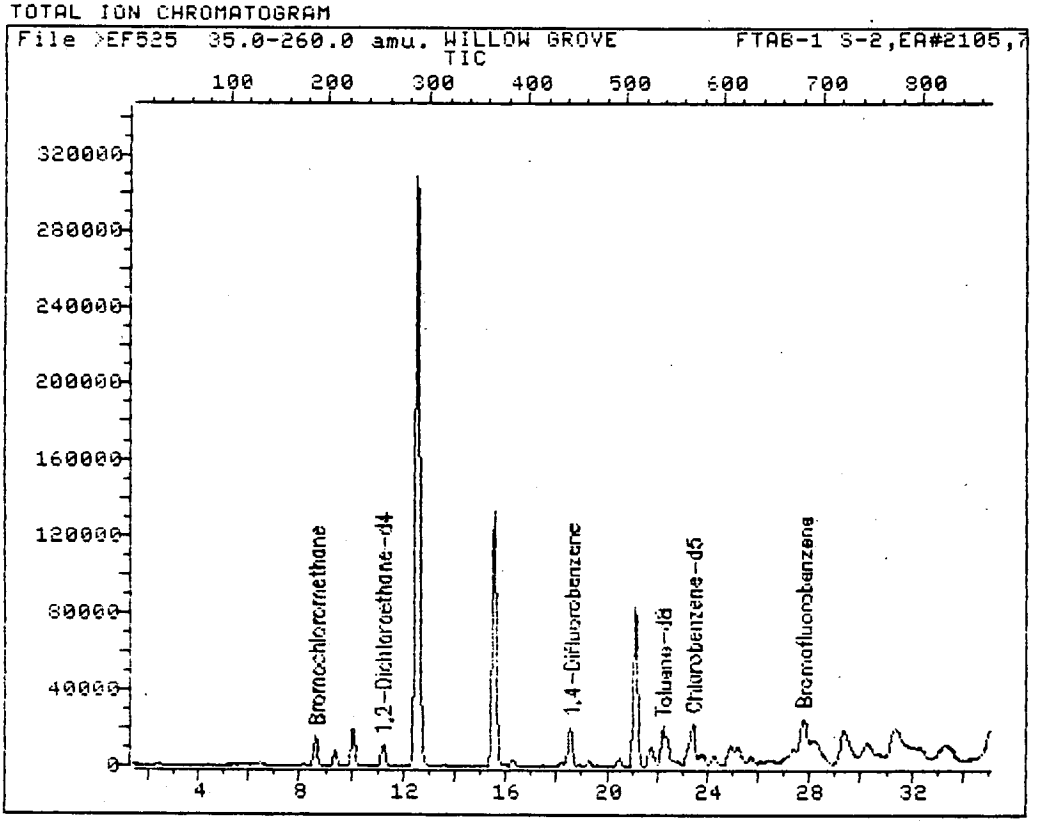
Column: (pack/cap) PACK Dilution Factor: 5.00

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	18.19	40.	J
2.	- -	UNKNOWN	19.32	30.	J
3.	- -	UNKNOWN	20.52	60.	J
4.	- -	UNKNOWN HYDROCARBON	21.76	100.	J
5.	- -	UNKNOWN	22.62	40.	J
6.	- -	UNKNOWN	23.82	50.	J
7.	- -	UNKNOWN	24.32	50.	J
8.	3073-66-3	Cyclohexane, 1,1,3-trimethyl	24.95	100.	J
9.	- -	UNKNOWN	25.76	40.	J
10.	- -	UNKNOWN	27.39	100.	J
11.	- -	UNKNOWN	30.77	50.	J
12.	69405-42-1	3-Nonene, 3-methyl-, (E)- (9	31.35	500.	J
13.	- -	UNKNOWN C10H160	33.33	200.	J
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

TOTAL ION CHROMATOGRAM



Data File: >EF525::D2 Quant Output File: ^EF525::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 19:00
Injected at: 890509 18:24

QUANT REPORT

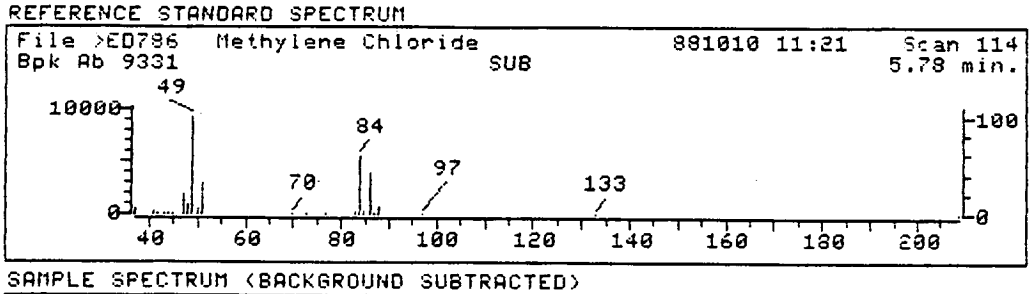
Operator ID: CARL Quant Rev: 6 Quant Time: 890509 19:00
Output File: ^EF525::QT Injected at: 890509 18:24
Data File: >EF525::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	20239	50.00	UG/KG	84
6)	Methylene Chloride	5.78	84.0	1626	3.89	UG/KG	95
7)	Acetone	6.44	43.0	9014	34.93	UG/KG	98
9)	1,1-Dichloroethene	8.15	96.0	2171	6.03	UG/KG	94
10)	1,1-Dichloroethane	9.39	63.0	34112	44.40	UG/KG	91
11)	1,2-Dichloroethene (total)	10.05	96.0	39567	98.00	UG/KG	80
13)	1,2-Dichloroethane-d4	11.21	65.0	41416	49.07	UG/KG	86
15)	*1,4-Difluorobenzene	18.58	114.0	71853	50.00	UG/KG	90
17)	1,1,1-Trichloroethane	12.53	97.0	1041585	959.65	UG/KG	93
23)	Trichloroethene	15.56	130.0	226167	341.46	UG/KG	91
25)	1,1,2-Trichloroethane	16.29	97.0	6520	11.54	UG/KG	98
29)	*Chlorobenzene-d5	23.43	117.0	60466	50.00	UG/KG	94
32)	Tetrachloroethene	21.14	164.0	115485	175.90	UG/KG	99
34)	Toluene	22.38	92.0	14038	19.85	UG/KG	97
35)	Toluene-d8	22.23	98.0	65650	50.84	UG/KG	98
37)	Ethylbenzene	25.41	106.0	4474	9.69	UG/KG	99
39)	Xylene (total)	29.37	106.0	44628M	68.84	UG/KG	97
40)	Bromofluorobenzene	27.78	95.0	65222	52.31	UG/KG	89

* Compound is ISTD

REFERENCE STANDARD SPECTRUM



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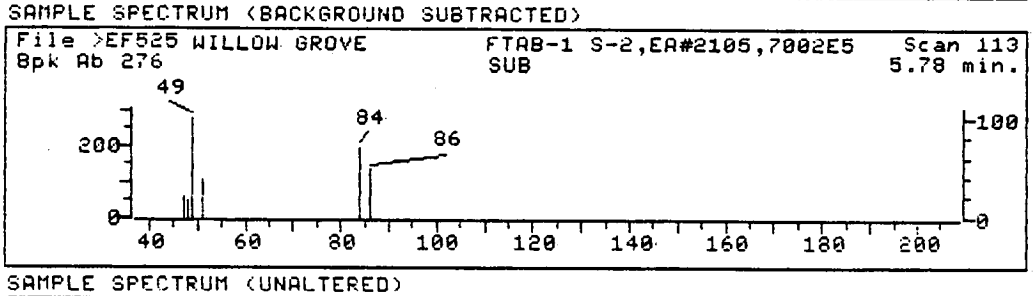

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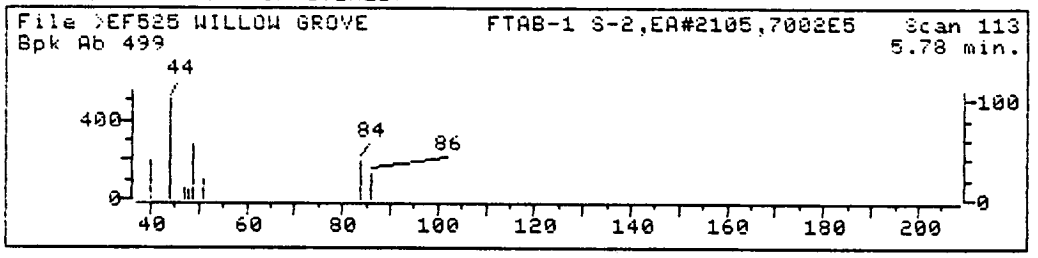
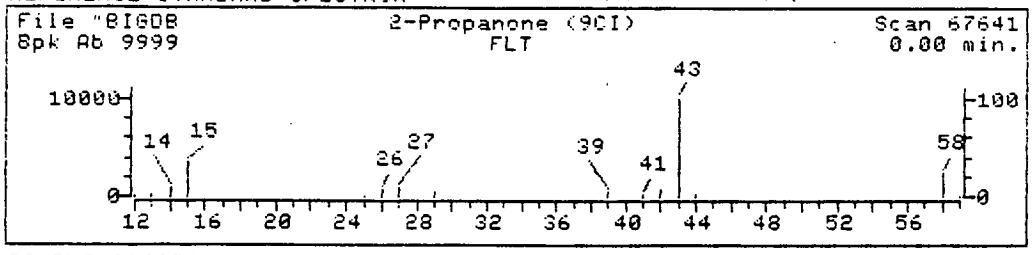


Data File: >EF525::D2 Quant Output File: ^EF525::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 113
Retention Time: 5.78 min.
Quant Ion: 84.0
Area: 1626
Concentration: 3.89 UG/KG
q-value: 95

REFERENCE STANDARD SPECTRUM



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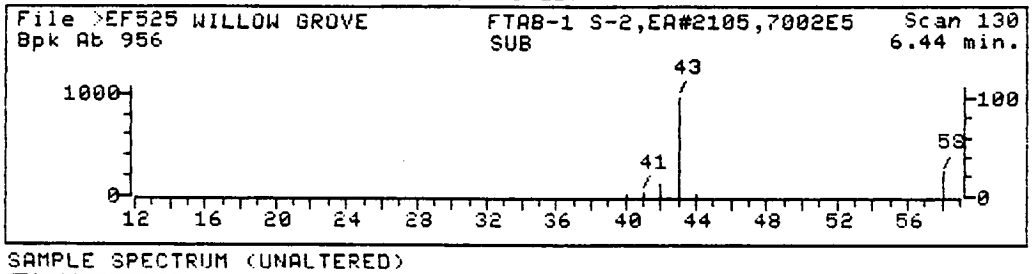

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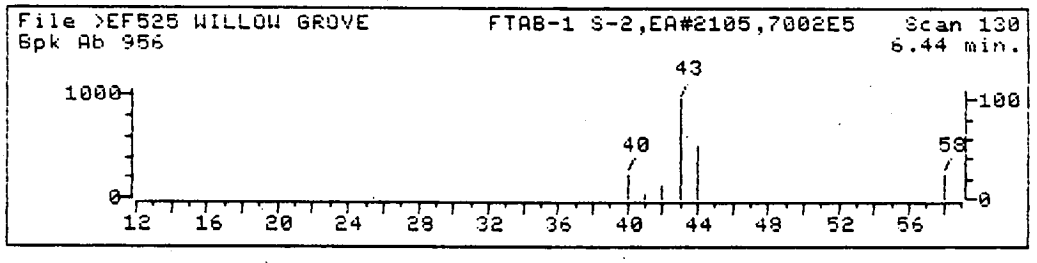
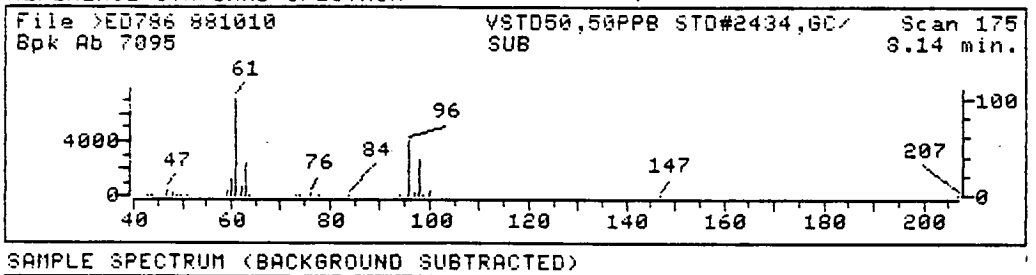


Data File: >EF525::D2 Quant Output File: ^EF525::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::8D
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 7
Compound Name: Acetone
Scan Number: 130
Retention Time: 6.44 min.
Quant Ion: 43.0
Area: 9014
Concentration: 34.93 UG/KG
q-value: 98

REFERENCE STANDARD SPECTRUM



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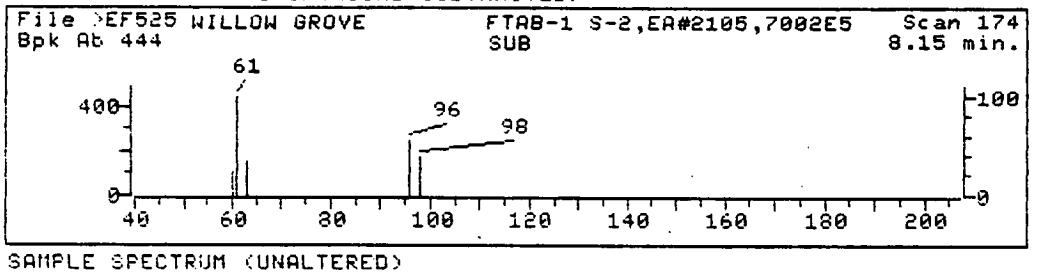

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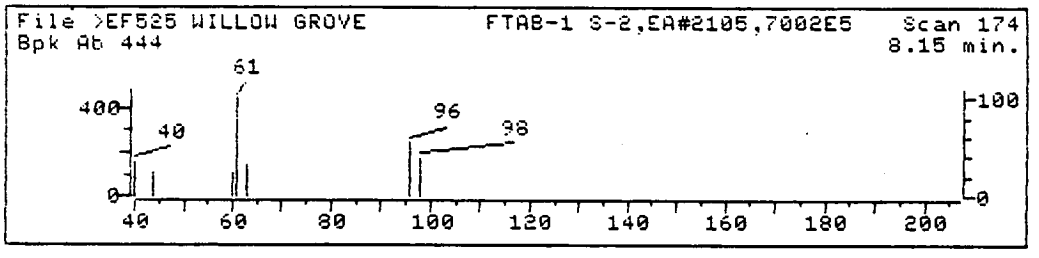

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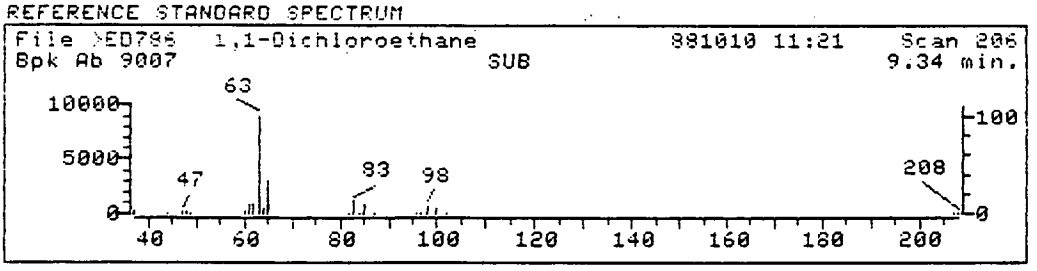
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::8D
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 9
Compound Name: 1,1-Dichloroethene
Scan Number: 174
Retention Time: 8.15 min.
Quant Ion: 96.0
Area: 2171
Concentration: 6.03 UG/KG
q-value: 94

REFERENCE STANDARD SPECTRUM



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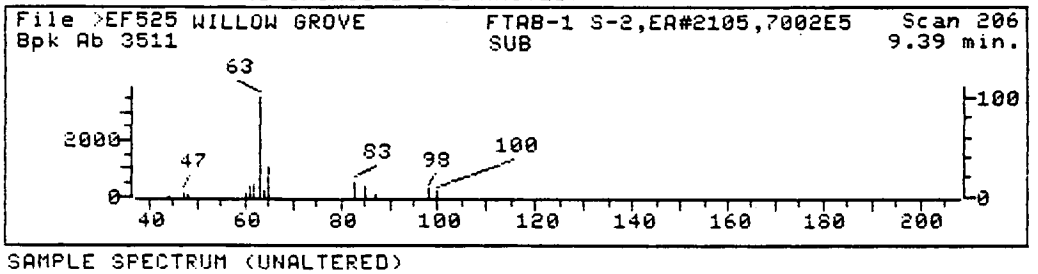

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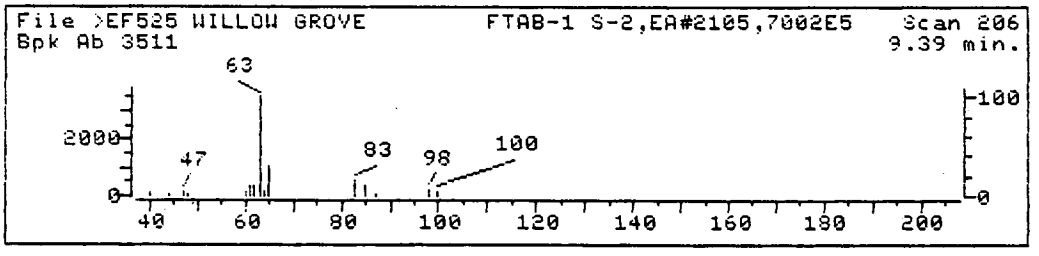

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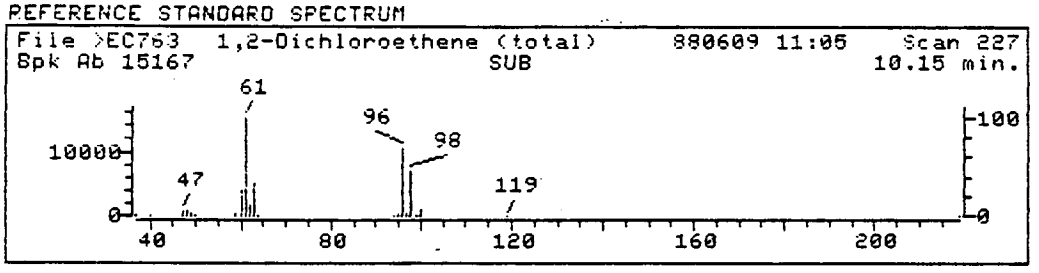
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 10
Compound Name: 1,1-Dichloroethane
Scan Number: 206
Retention Time: 9.39 min.
Quant Ion: 63.0
Area: 34112
Concentration: 44.40 UG/KG
q-value: 91

REFERENCE STANDARD SPECTRUM



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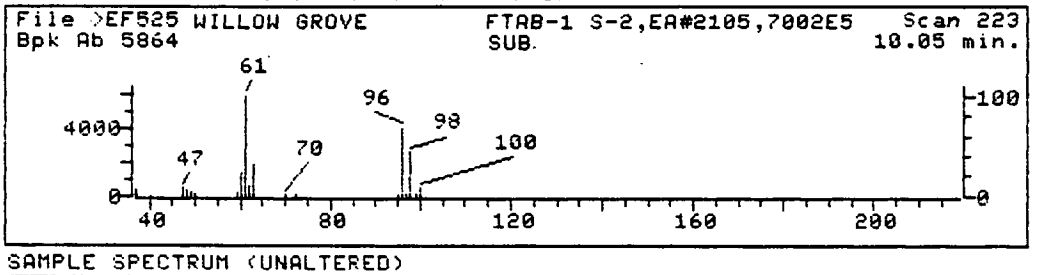

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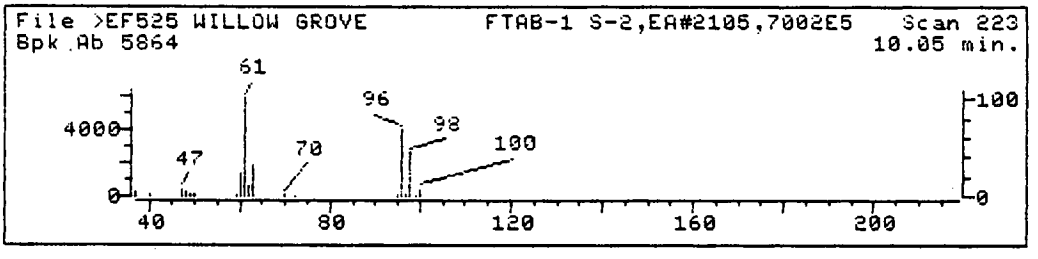

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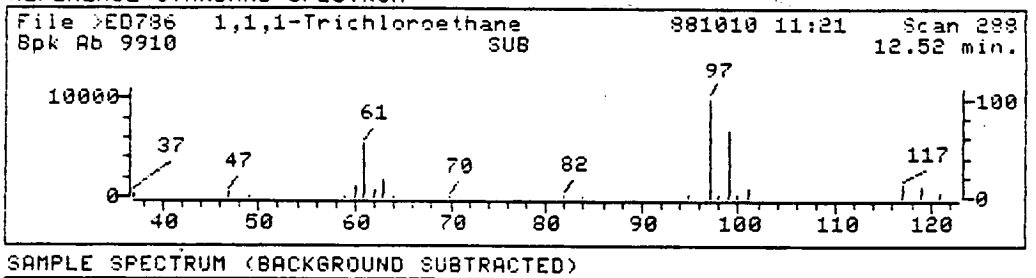
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 11
Compound Name: 1,2-Dichloroethene (total)
Scan Number: 223
Retention Time: 10.05 min.
Quant Ion: 96.0
Area: 39567
Concentration: 98.00 UG/KG
q-value: 80

REFERENCE STANDARD SPECTRUM



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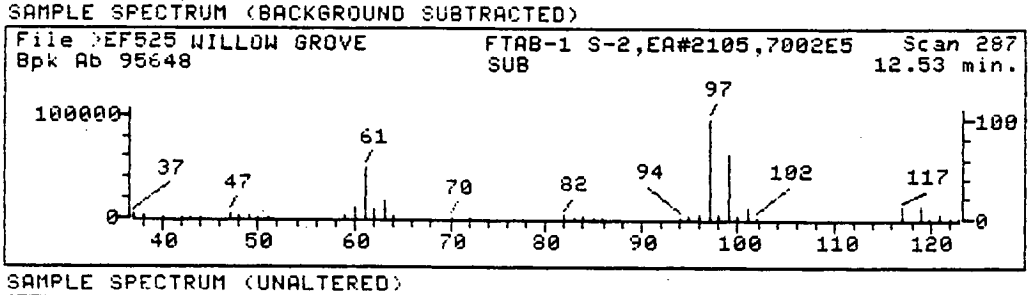

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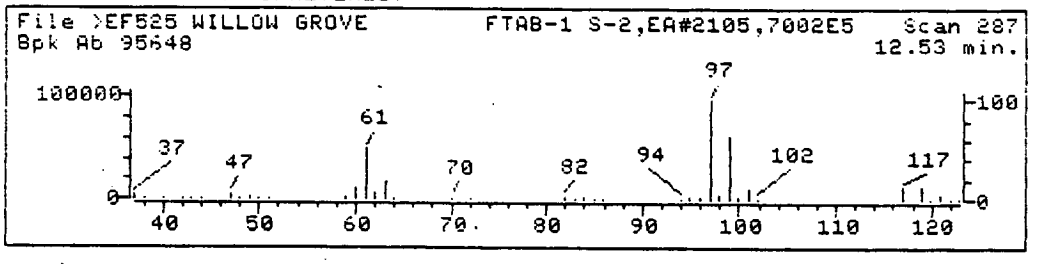
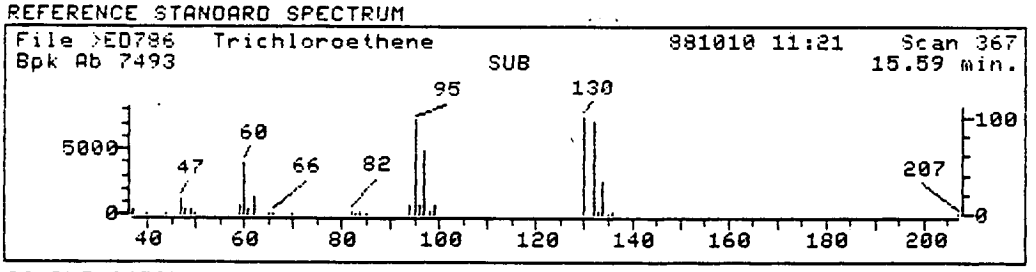


Data File: >EF525::D2 Quant Output File: ^EF525::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 17
Compound Name: 1,1,1-Trichloroethane
Scan Number: 287
Retention Time: 12.53 min.
Quant Ion: 97.0
Area: 1041585
Concentration: 959.65 UG/KG
q-value: 93

REFERENCE STANDARD SPECTRUM



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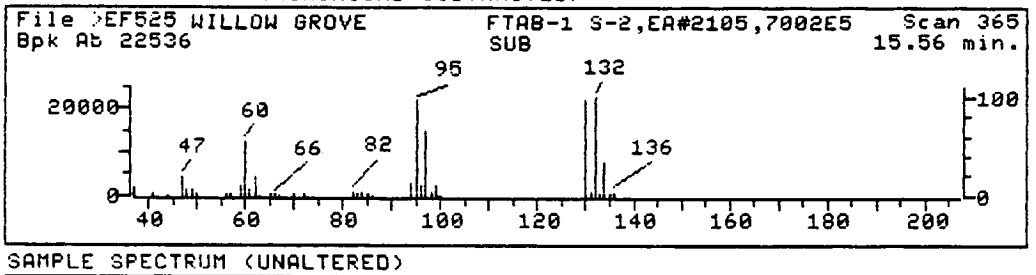
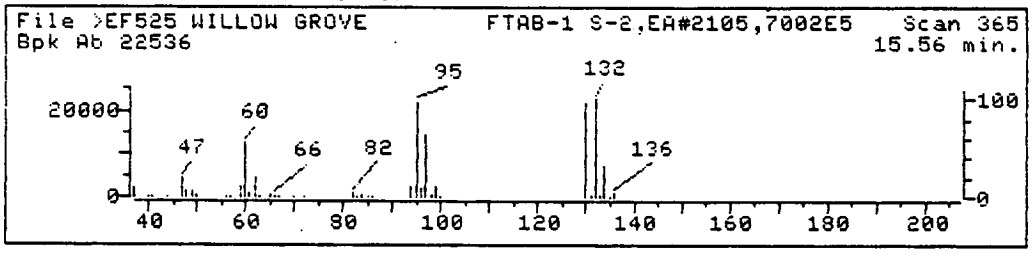


SAMPLE SPECTRUM (UNALTERED)



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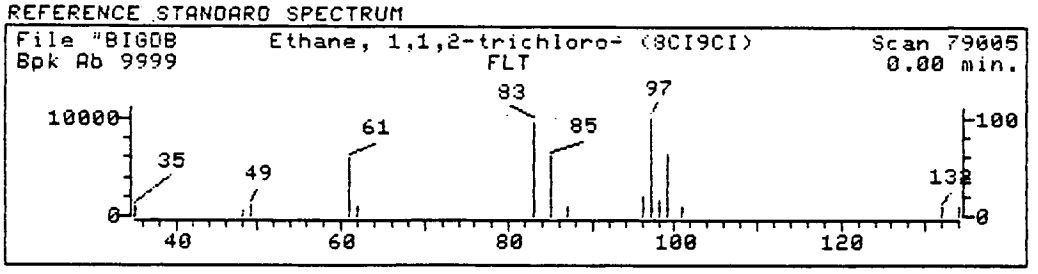
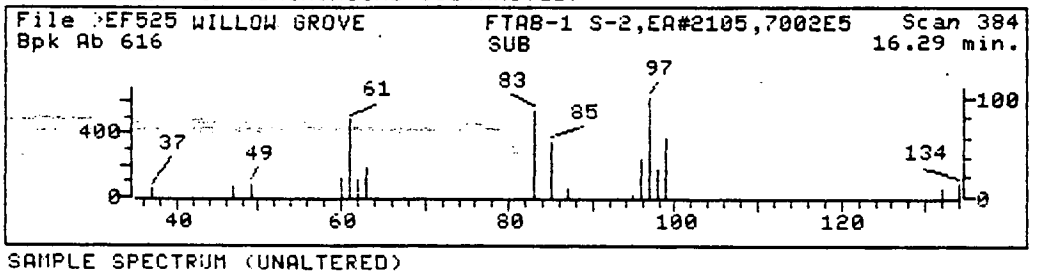
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 365
Retention Time: 15.56 min.
Quant Ion: 130.0
Area: 226167
Concentration: 341.46 UG/KG
q-value: 91

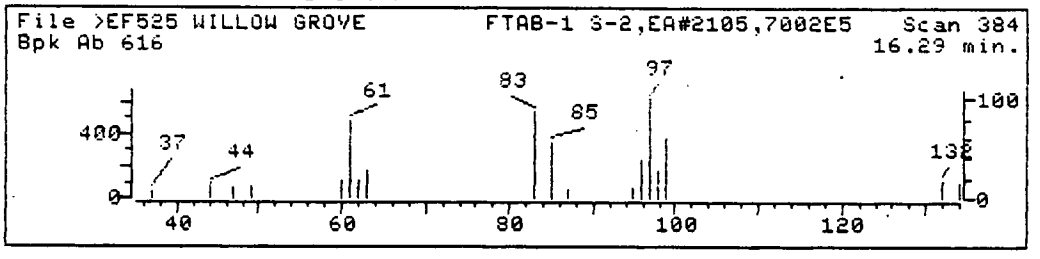
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



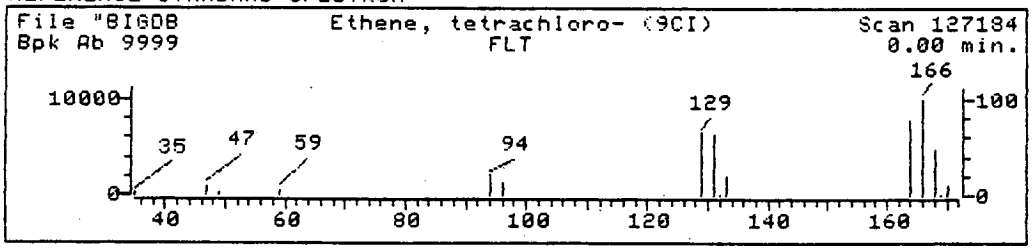
SAMPLE SPECTRUM (UNALTERED)



Data File: >EF525::D2 Quant Output File: ^EF525::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 25
Compound Name: 1,1,2-Trichloroethane
Scan Number: 384
Retention Time: 16.29 min.
Quant Ion: 97.0
Area: 6520
Concentration: 11.54 UG/KG
q-value: 98

REFERENCE STANDARD SPECTRUM



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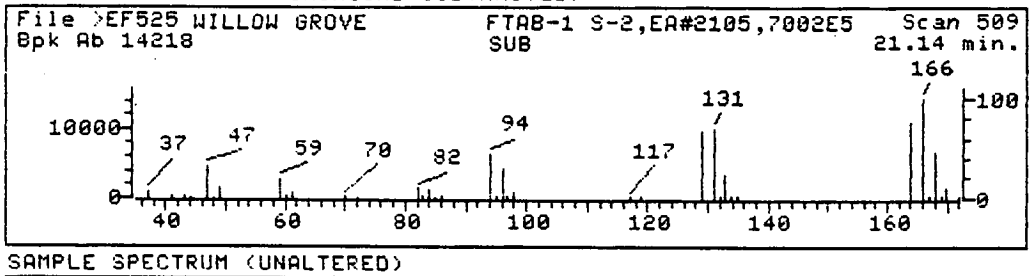

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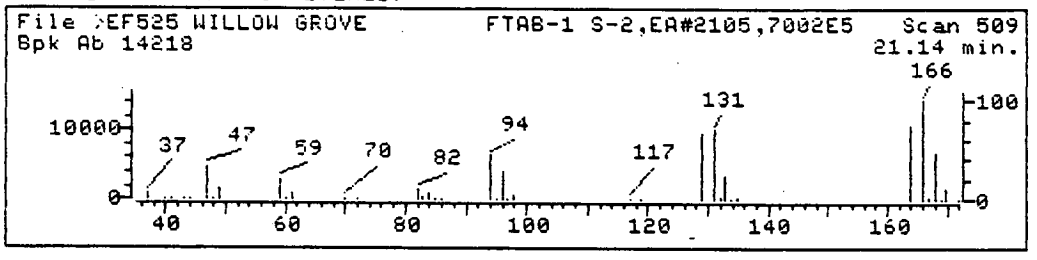

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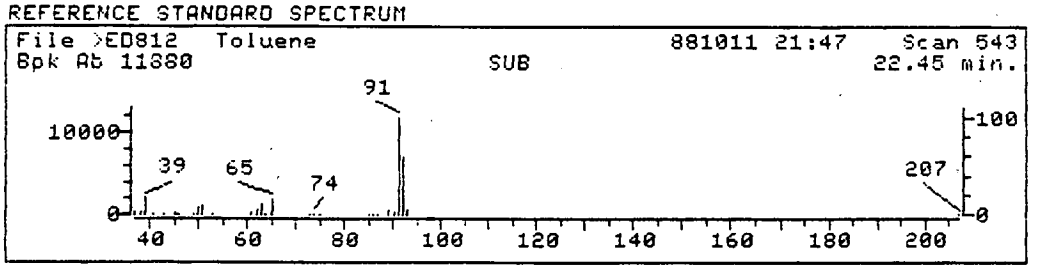
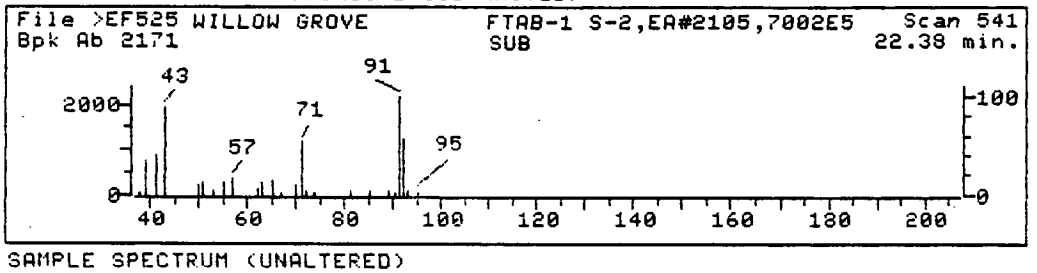
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 32
Compound Name: Tetrachloroethene
Scan Number: 509
Retention Time: 21.14 min.
Quant Ion: 164.0
Area: 115485
Concentration: 175.90 UG/KG
q-value: 99

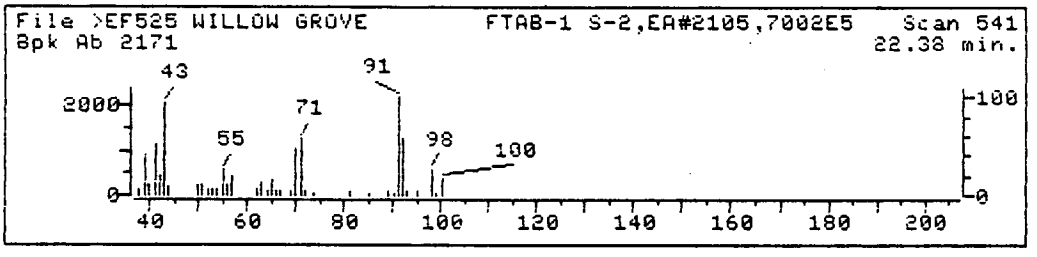
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



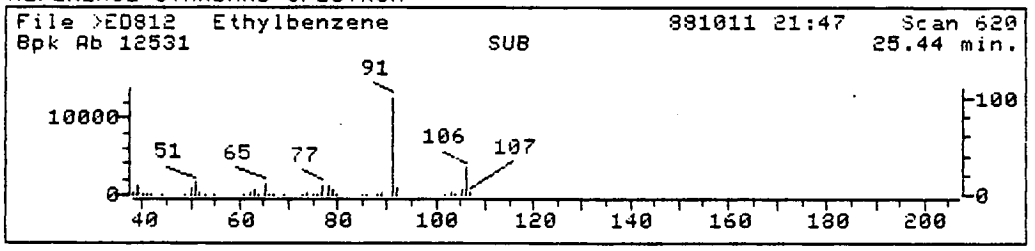
SAMPLE SPECTRUM (UNALTERED)



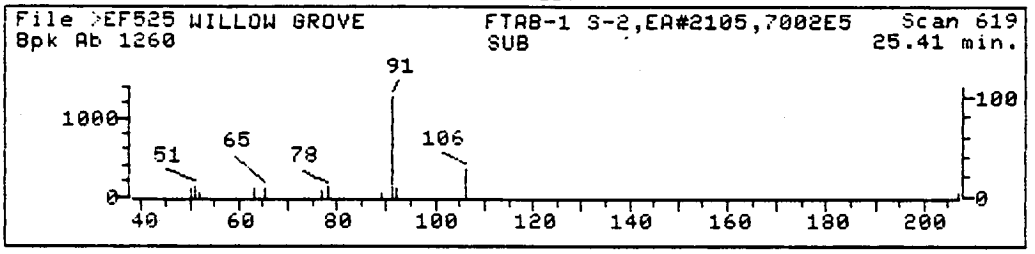
Data File: >EF525::D2 Quant Output File: ^EF525::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 34
Compound Name: Toluene
Scan Number: 541
Retention Time: 22.38 min.
Quant Ion: 92.0
Area: 14038
Concentration: 19.85 UG/KG
q-value: 97

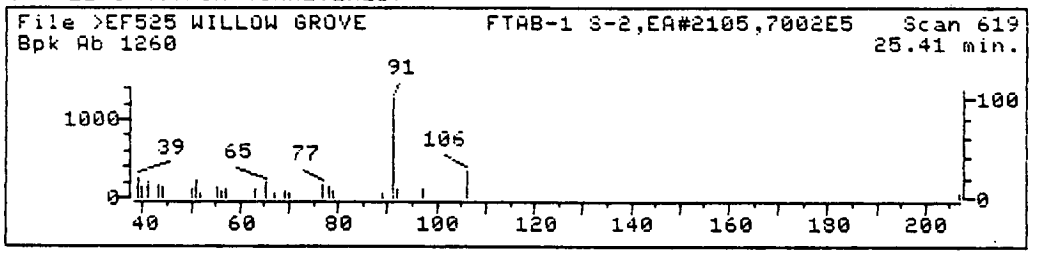
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



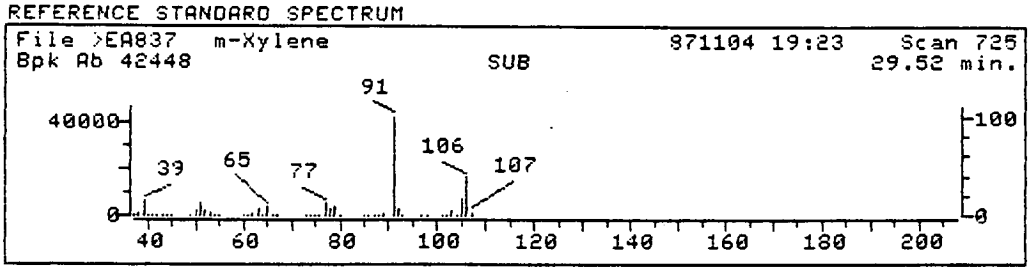
SAMPLE SPECTRUM (UNALTERED)



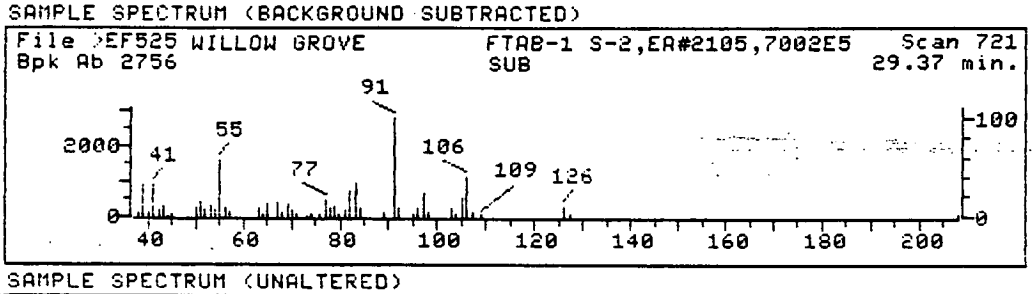
Data File: >EF525::D2 Quant Output File: ^EF525::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 37
Compound Name: Ethylbenzene
Scan Number: 619
Retention Time: 25.41 min.
Quant Ion: 106.0
Area: 4474
Concentration: 9.69 UG/KG
q-value: 99

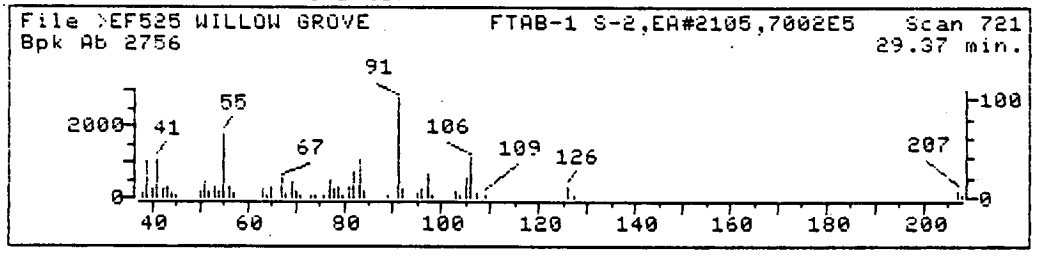
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

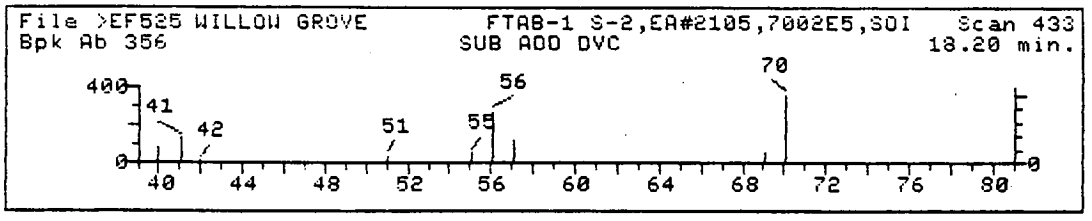


SAMPLE SPECTRUM (UNALTERED)



Data File: >EF525::D2 Quant Output File: ^EF525::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 19:00 Quant ID File: EVOAS::BD
Injected at: 890509 18:24 Last Calibration: 890509 13:58

Compound No: 39
Compound Name: Xylene (total)
Scan Number: 721
Retention Time: 29.37 min.
Quant Ion: 106.0
Area: 23427
Concentration: **68.84** UG/KG
q-value: 92

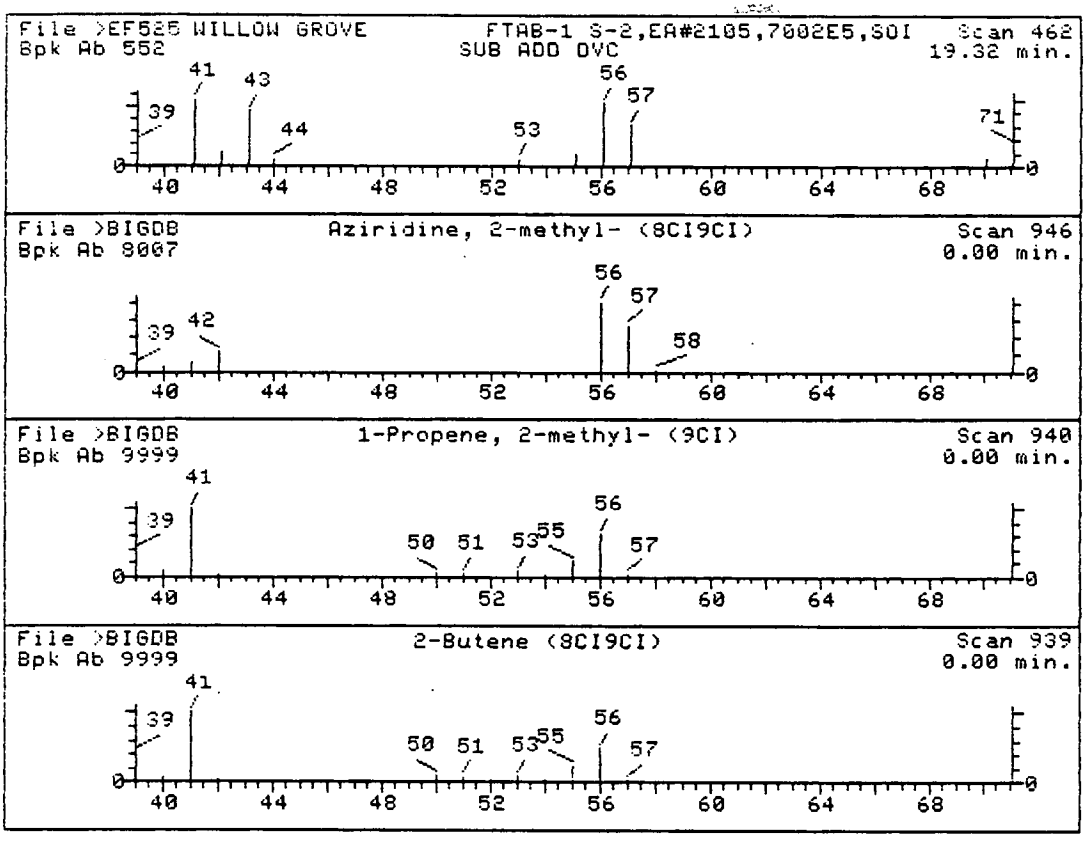


Retention time = 18.20 . UNKNOWN

Area = 35861.00 Tentative Concentration is 7.00

Sample file: >EF525 Spectrum #: 433

No data base entries were retrieved.



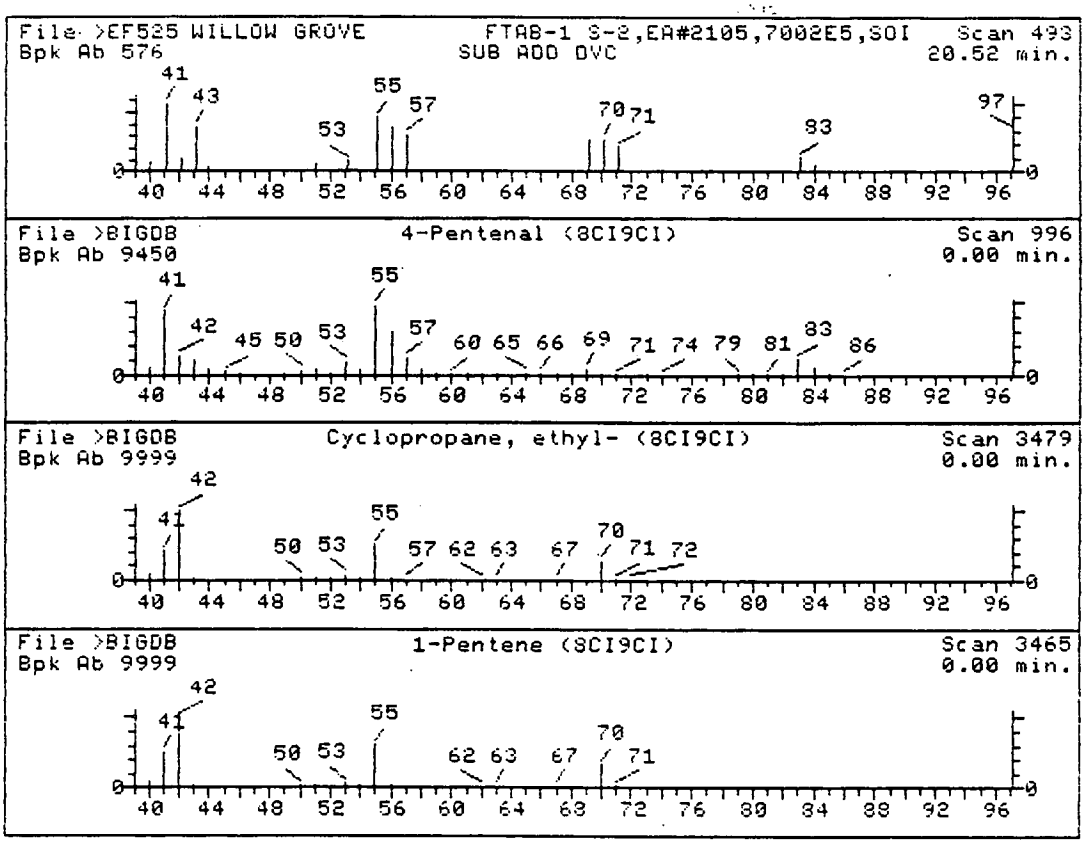
Retention time = 19.32 UNKNOWN

Area = 27594.00 Tentative Concentration is 5.00

1. Aziridine, 2-methyl- (8CI9CI) 57 C3H7N
2. 1-Propene, 2-methyl- (9CI) 56 C4H8
3. 2-Butene (8CI9CI) 56 C4H8

Sample file: >EF525 Spectrum #: 462
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	15*	75558	946	"BIGDB	22	45	2	0	76	57	3	13
2.	15*	115117	940	"BIGDB	20	53	2	0	79	60	3	13
3.	11*	107017	939	"BIGDB	23	58	2	0	83	61	2	13



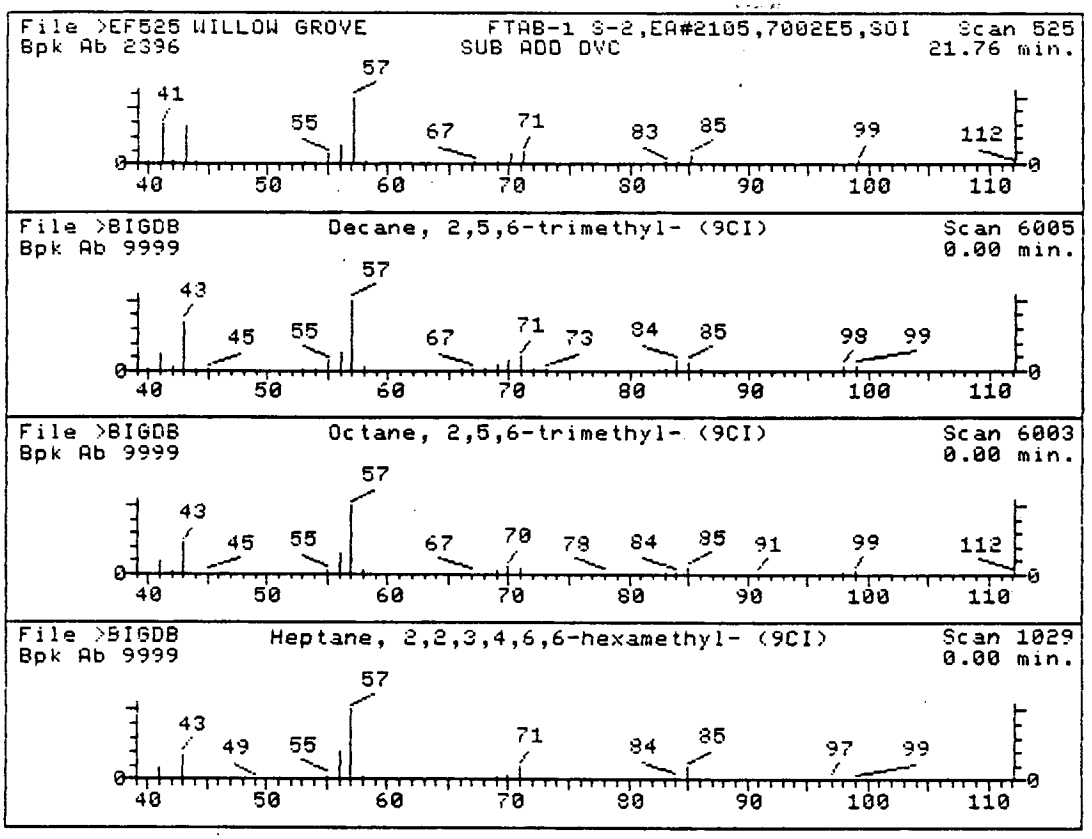
Retention time = 20.52 UNKNOWN

Area = 52228.00 Tentative Concentration is 10.00

1.	4-Pentenal (8CI9CI)	84 C5H8O
2.	Cyclopropane, ethyl- (8CI9CI)	70 C5H10
3.	1-Pentene (8CI9CI)	70 C5H10
4.	Cyclopropane, 1,2-dimethyl-, trans- (8CI9CI)	70 C5H10
5.	Cyclopropane, 1,2-dimethyl-, cis- (8CI9CI)	70 C5H10
6.	2-Pentyn-1-ol (8CI9CI)	84 C5H8O
7.	Cyclopropane, 1,1-dimethyl- (8CI9CI)	70 C5H10

Sample file: >EF525 Spectrum #: 493
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	57*	2100176	996	"BIGDB	55	59	1	0	74	35	22	42
2.	26*	1191964	3479	"BIGDB	26	60	2	0	157	44	8	14
3.	25*	109671	3465	"BIGDB	25	61	3	0	132	42	8	13
4.	25*	2402064	3481	"BIGDB	20	70	2	0	80	49	7	13
5.	25*	930187	3477	"BIGDB	20	71	2	0	80	49	7	13
6.	24*	6261229	188	"BIGDB	23	99	3	0	64	41	8	12
7.	20*	1630940	3507	"BIGDB	22	61	2	0	77	54	5	13



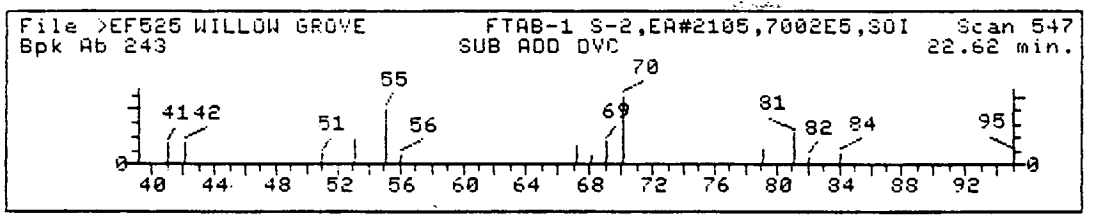
Retention time = 21.76 UNKNOWN HYDROCARBON

Area = 149050.0 Tentative Concentration is 21.00

1.	Decane, 2,5,6-trimethyl- (9CI)	184	C13H28
2.	Octane, 2,5,6-trimethyl- (9CI)	156	C11H24
3.	Heptane, 2,2,3,4,6,6-hexamethyl- (9CI)	184	C13H28
4.	Pentane, 2,2,3,4-tetramethyl- (8CI9CI)	128	C9H20
5.	Methanamine, N-pentylidene- (9CI)	99	C6H13N
6.	Octane, 2,4,6-trimethyl- (9CI)	156	C11H24

Sample file: >EF525 Spectrum #: 525
Search speed: 2 Tilting option: S No. of ion ranges searched: 53

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	70	62108230	6005	"BIGDB	58	43	2	0	81	6	42	15
2.	60	62016142	6003	"BIGDB	43	44	2	0	98	12	30	14
3.	60	62108321	1029	"BIGDB	38	49	2	0	73	14	30	12
4.	48	1186534	1016	"BIGDB	57	29	2	0	89	21	17	19
5.	29*	10599754	3487	"BIGDB	22	53	3	0	126	31	12	12
6.	24	62016379	6004	"BIGDB	36	49	2	0	60	43	8	12

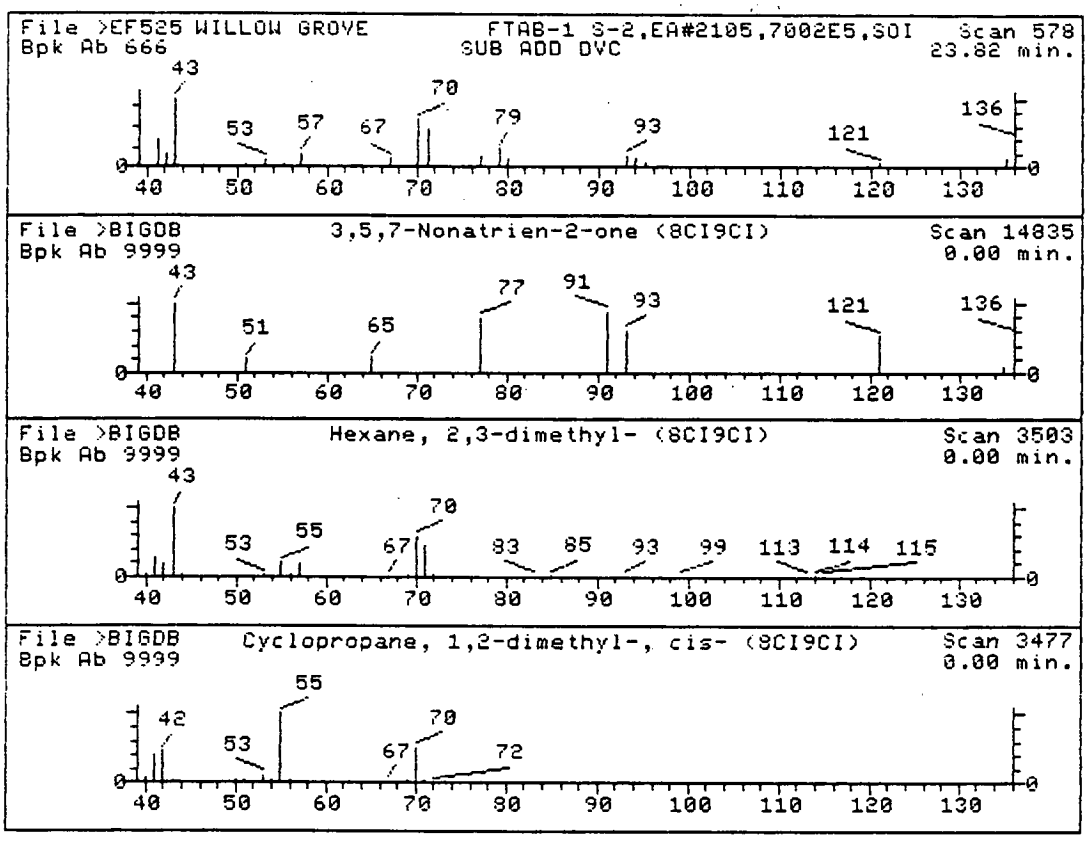


Retention time = 22.62 VNKNOWN

Area = 46926.00 Tentative Concentration is 7.00

Sample file: >EF525 Spectrum #: 547

No data base entries were retrieved.



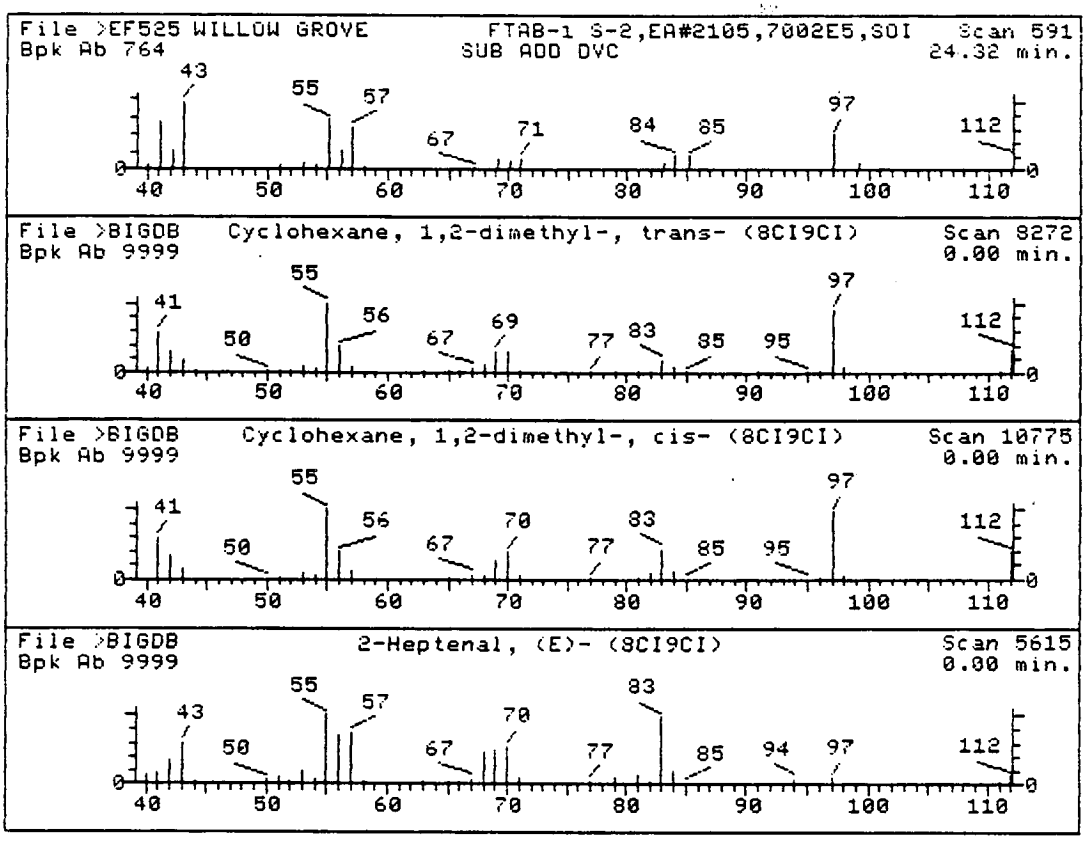
Retention time = 23.82 UNKNOWN

Area = 60237.00 Tentative Concentration is 8.00

1.	3,5,7-Nonatrien-2-one (8CI9CI)	136	C9H12O
2.	Hexane, 2,3-dimethyl- (8CI9CI)	114	C8H18
3.	Cyclopropane, 1,2-dimethyl-, cis- (8CI9CI)	70	C5H10
4.	Cyclopropane, 1,2-dimethyl-, trans- (8CI9CI)	70	C5H10

Sample file: >EF525 Spectrum #: 578
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	20*	17609324	14835	"BIGDB	29	51	3	0	75	53	5	14
2.	11	584941	3503	"BIGDB	41	46	2	0	97	64	2	13
3.	11*	930187	3477	"BIGDB	32	59	3	0	95	63	2	13
4.	11*	2402064	3481	"BIGDB	27	63	3	0	97	63	2	13



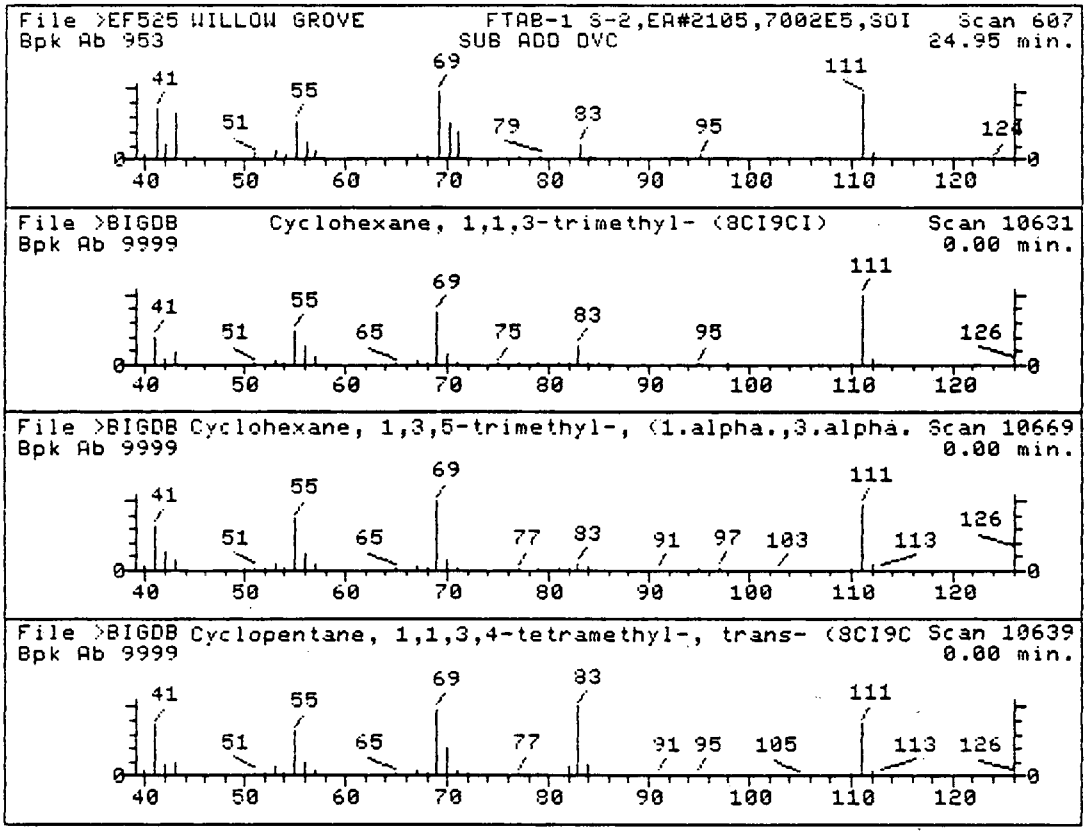
Retention time = 24.32 UNKNOWN

Area = 65239.00 Tentative Concentration is 9.00

1.	Cyclohexane, 1,2-dimethyl-, trans- (8CI9CI)	112 C8H16
2.	Cyclohexane, 1,2-dimethyl-, cis- (8CI9CI)	112 C8H16
3.	2-Heptenal, (E)- (8CI9CI)	112 C7H12O
4.	Cyclohexane, 1,4-dimethyl-, cis- (8CI9CI)	112 C8H16
5.	4-Pentenal, 2,2-dimethyl- (8CI9CI)	112 C7H12O
6.	Cyclohexane, 1,4-dimethyl-, trans- (8CI9CI)	112 C8H16
7.	Cycloheptane, methyl- (8CI9CI)	112 C8H16

Sample file: >EF525 Spectrum #: 591
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	25*	6876239	8272	"BIGDB	40	67	3	0	57	47	7	13
2.	25*	2207014	10775	"BIGDB	35	78	3	0	54	47	7	13
3.	25*	18829555	5615	"BIGDB	32	92	3	0	54	50	7	13
4.	20*	624293	8259	"BIGDB	42	60	2	0	61	52	5	15
5.	20*	5497676	3568	"BIGDB	42	60	3	0	73	53	5	13
6.	20*	2207047	8266	"BIGDB	36	66	2	0	57	55	5	14
7.	20*	4126787	8269	"BIGDB	23	83	3	0	73	52	5	12



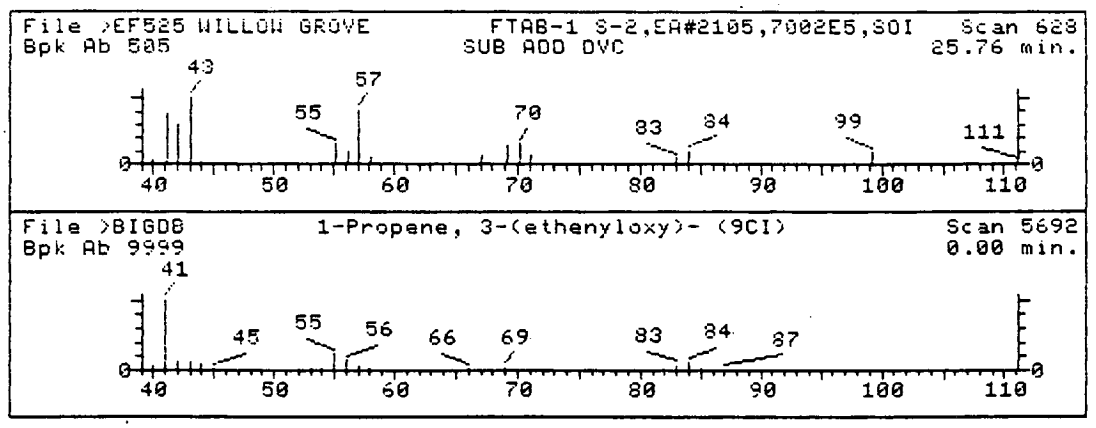
Retention time = 24.95

Area = 143375.0 Tentative Concentration is 20.00

1.	Cyclohexane, 1,1,3-trimethyl- (8CI9CI)	126	C9H18
2.	Cyclohexane, 1,3,5-trimethyl-, (1.alpha.,3.alpha.,5. beta.)- (9CI)	126	C9H18
3.	Cyclopentane, 1,1,3,4-tetramethyl-, trans- (8CI9CI)	126	C9H18
4.	Cyclohexane, 1-ethyl-2,4-dimethyl- (9CI)	140	C10H20
5.	Cyclooctane, butyl- (8CI)	168	C12H24
6.	2-Octene, (E)- (8CI9CI)	112	C8H16
7.	3-Octene, (Z)- (8CI9CI)	112	C8H16

Sample file: >EF525 Spectrum #: 607
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	41*	3073663	10631	"BIGDB	55	44	2	0	86	45	14	32
2.	36	1795262	10669	"BIGDB	62	51	2	0	76	27	14	13
3.	34*	20309777	10639	"BIGDB	54	57	3	0	89	34	12	17
4.	29	61142696	10651	"BIGDB	50	40	2	0	100	42	8	17
5.	27	16538935	10637	"BIGDB	49	46	2	0	93	36	10	13
6.	25*	13389429	10791	"BIGDB	40	45	2	1	43	48	7	13
7.	25*	14850227	10793	"BIGDB	45	50	2	1	53	49	7	17



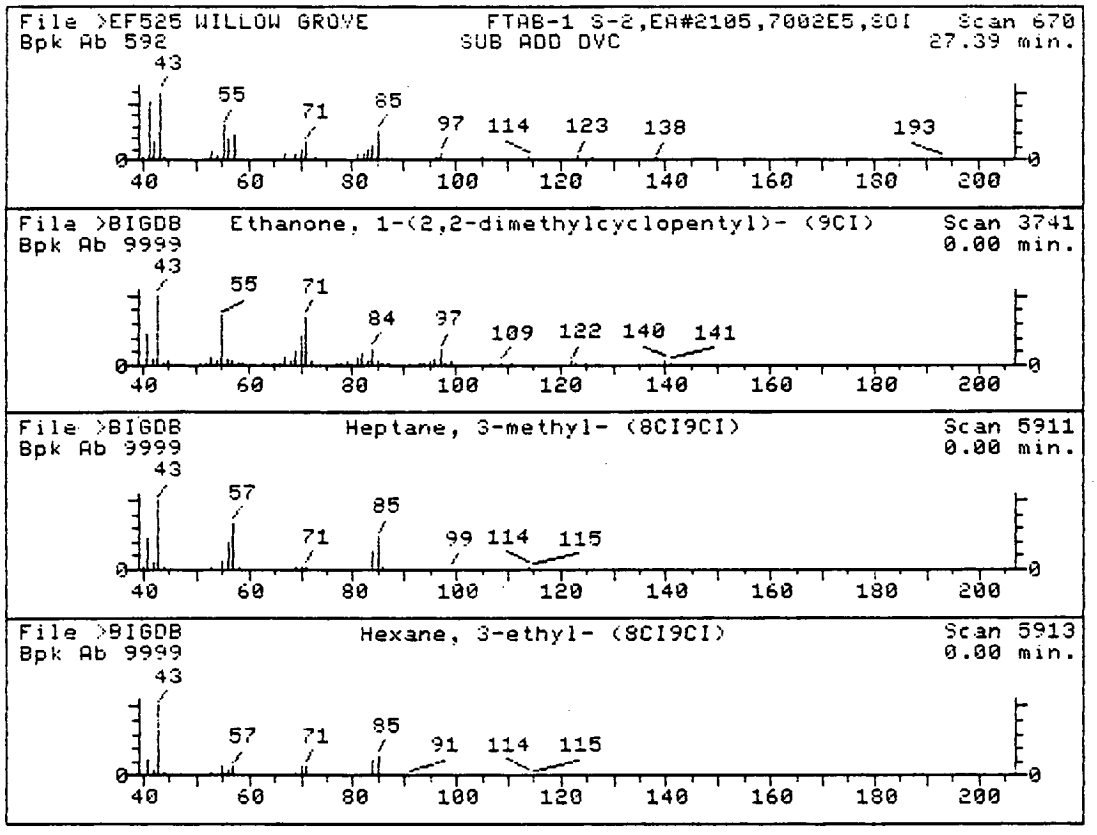
Retention time = 25.76 UNKNOWN

Area = 39813.00 Tentative Concentration is 6.00

1. 1-Propene, 3-(ethenyloxy)- (9CI) 84 C5H8O

Sample file: >EF525 Spectrum #: 628
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	11*	3917155	5692	"BIGDB	23	64	2	0	106	64	2	13



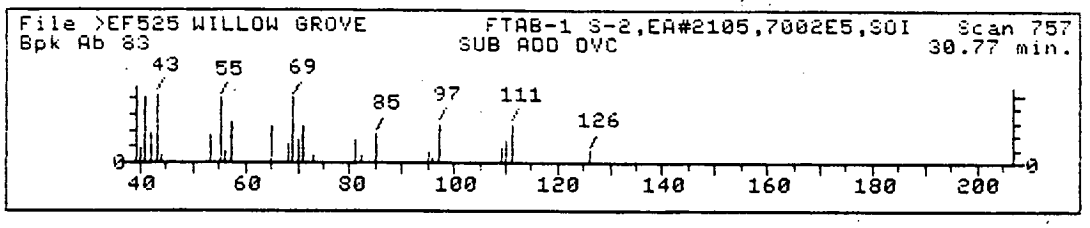
Retention time = 27.39 UNKNOWN '

Area = 128863.0 Tentative Concentration is 18.00

1. Ethanone, 1-(2,2-dimethylcyclopentyl)- (9CI)	140	C9H16O
2. Heptane, 3-methyl- (8CI9CI)	114	C8H18
3. Hexane, 3-ethyl- (8CI9CI)	114	C8H18
4. Hexane, 2,4-dimethyl- (8CI9CI)	114	C8H18
5. Octane (DOT)(8CI9CI)	114	C8H18
6. Piperidine (8CI9CI)	85	C5H11N

Sample file: >EF525 Spectrum #: 670
S arch speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	25	3664753	3741	"BIGDB	40	48	2	0	40	50	7	12
2.	25*	589811	5911	"BIGDB	31	60	2	0	79	47	7	15
3.	25*	619998	5913	"BIGDB	25	65	1	0	91	50	7	14
4.	25*	589435	5910	"BIGDB	22	76	3	0	98	47	7	12
5.	20*	111659	6064	"BIGDB	32	61	2	0	100	52	5	15
6.	15*	110894	5714	"BIGDB	26	73	3	0	97	56	3	13

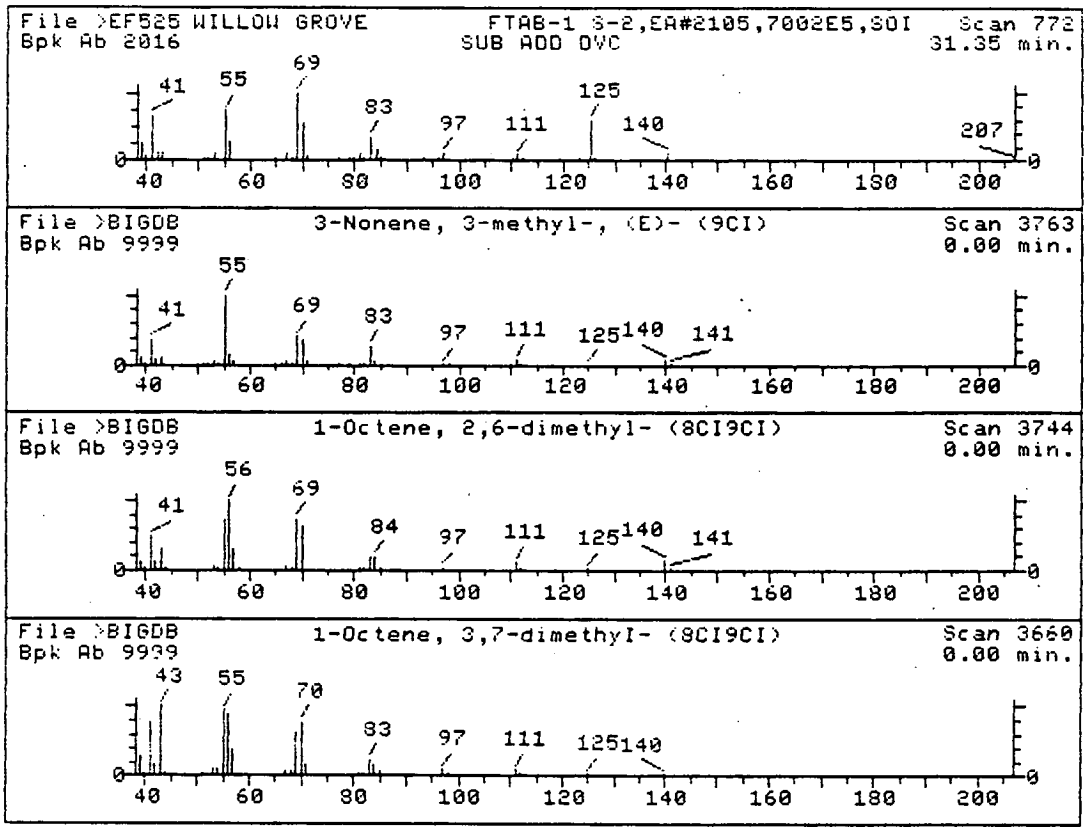


Retention time = 30.77 UNKNOWN

Area = 62979.00 Tentative Concentration is 9.00

Sample file: >EF525 Spectrum #: 757

No data base entries were retrieved.



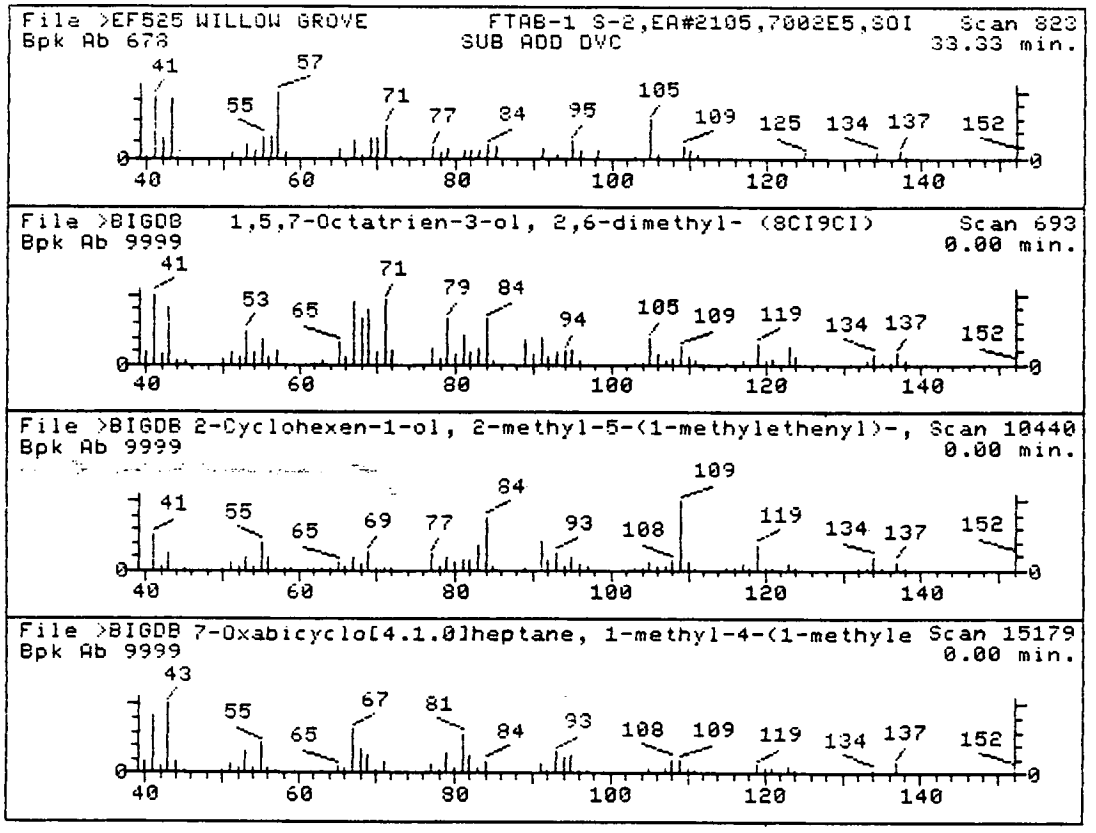
Retention time = 31.35

Area = 628467.0 Tentative Concentration is 88.00

1.	3-Nonene, 3-methyl-, (E)- (9CI)	140	C10H20
2.	1-Octene, 2,6-dimethyl- (8CI9CI)	140	C10H20
3.	1-Octene, 3,7-dimethyl- (8CI9CI)	140	C10H20
4.	Cyclohexane, 1,1'-(1-methylethylidene)bis- (9CI)	208	C15H28
5.	1-Octene, 3,3-dimethyl- (9CI)	140	C10H20
6.	Cyclopentane, (2-methylbutyl)- (9CI)	140	C10H20
7.	1-Hexene, 3,3,5-trimethyl- (9CI)	126	C9H18

Sample file: >EF525 Spectrum #: 772
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	36*	69405421	3763	"BIGDB	47	42	2	0	122	45	12	27
2.	31*	6874299	3744	"BIGDB	47	56	2	0	74	44	8	19
3.	31*	4984014	3660	"BIGDB	48	60	2	0	72	44	8	19
4.	31	54934906	12992	"BIGDB	64	61	2	0	67	33	12	14
5.	30*	74511516	3575	"BIGDB	49	57	2	0	80	46	10	22
6.	30*	53366384	10645	"BIGDB	36	76	3	0	100	33	12	13
7.	28*	13427435	3548	"BIGDB	29	64	2	0	100	39	10	14



Retention time = 33.33 UNKNOWN C10H16O

Area = 278736.0 Tentative Concentration is 39.00

1. 1,5,7-Octatrien-3-ol, 2,6-dimethyl- (8CI9CI) 152 C10H16O
2. 2-Cyclohexen-1-ol, 2-methyl-5-(1-methylethenyl)-, trans- (9CI) 152 C10H16O
3. 7-Oxabicyclo[4.1.0]heptane, 1-methyl-4-(1-methylethenyl)- (9CI) 152 C10H16O
4. Pentane, 3-chloro- (8CI9CI) 106 C5H11Cl

Sample file: >EF525 Spectrum #: 823
Search speed: 2 Tilting option: S No. of ion ranges searched: 75

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	24*	29414560	693	"BIGDB	23	110	3	0	54	43	8	12
2.	11*	1197075	10440	"BIGDB	31	63	3	0	20	65	2	13
3.	11*	1195922	15179	"BIGDB	35	84	3	0	91	63	2	13
4.	11*	616206	3530	"BIGDB	23	77	3	0	94	63	2	12

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RE
FTAB1S2 DL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2105

Sample wt/vol: 1.0 ~~5.0~~ (g/mL) G Lab File ID: EF545

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 16. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 25.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	300.	U
74-83-9	Bromomethane	300.	U
75-01-4	Vinyl Chloride	300.	U
75-00-3	Chloroethane	300.	U
75-09-2	Methylene Chloride	150.	U
67-64-1	Acetone	530.	D
75-15-0	Carbon Disulfide	150.	U
75-35-4	1,1-Dichloroethene	150.	U
75-34-3	1,1-Dichloroethane	140.	J D
540-59-0	1,2-Dichloroethene (total)	350.	D
67-66-3	Chloroform	150.	U
107-06-2	1,2-Dichloroethane	150.	U
78-93-3	2-Butanone	300.	U
71-55-6	1,1,1-Trichloroethane	3700.	D
56-23-5	Carbon Tetrachloride	150.	U
108-05-4	Vinyl Acetate	300.	U
75-27-4	Bromodichloromethane	150.	U
78-87-5	1,2-Dichloropropane	150.	U
10061-01-5	cis-1,3-Dichloropropene	150.	U
79-01-6	Trichloroethene	1400.	D
124-48-1	Dibromochloromethane	150.	U
79-00-5	1,1,2-Trichloroethane	150.	U
71-43-2	Benzene	150.	U
10061-02-6	trans-1,3-Dichloropropene	150.	U
75-25-2	Bromoform	150.	U
108-10-1	4-Methyl-2-Pentanone	300.	U
591-78-6	2-Hexanone	300.	U
127-18-4	Tetrachloroethene	960.	D
79-34-5	1,1,2,2-Tetrachloroethane	150.	U
108-88-3	Toluene	80.	J D
108-90-7	Chlorobenzene	150.	U
100-41-4	Ethylbenzene	150.	U
100-42-5	Styrene	150.	U
1330-20-7	Xylen (total)	410.	D

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAB1S2 DL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2105

Sample wt/vol: 1.0 ~~5.0~~ (g/mL) G Lab File ID: EF545

L v l: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 16. Date Analyzed: 5/11/89

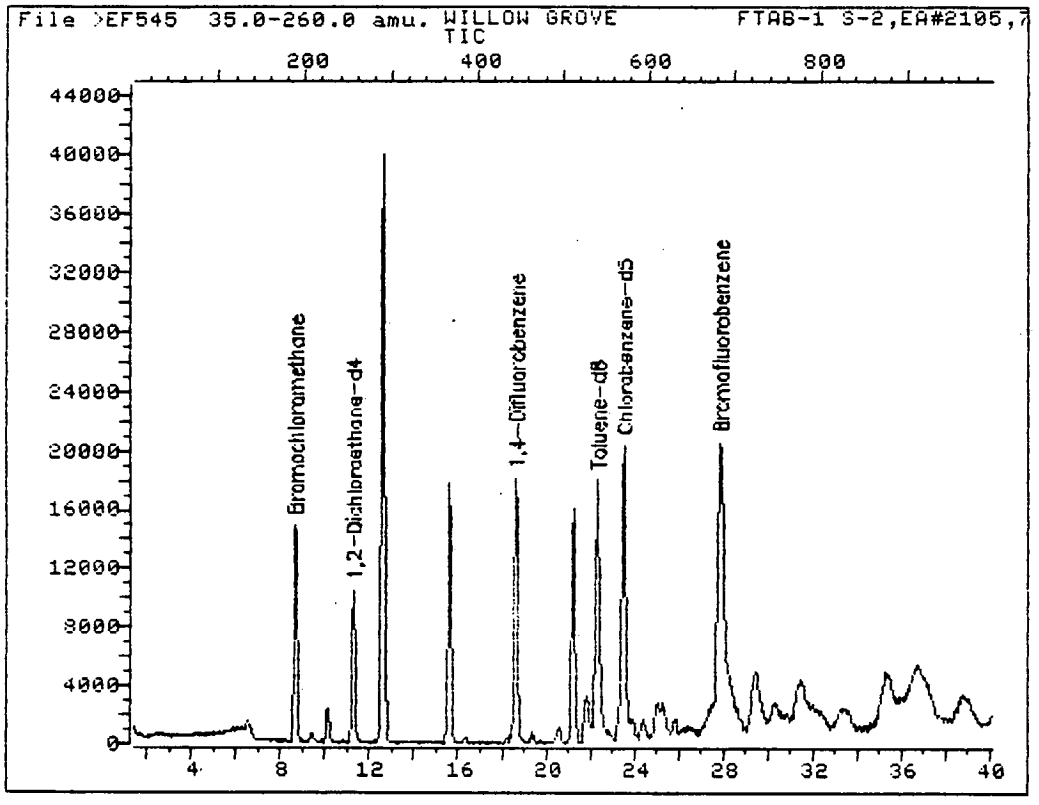
Column: (pack/cap) PACK Dilution Factor: 25.00

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	21.82	300.	J
2.	- -	UNKNOWN	25.04	200.	J
3.	- -	UNKNOWN	27.41	200.	J
4.	- -	UNKNOWN	28.42	300.	J
5.	- -	UNKNOWN	31.40	500.	J
6.	611-14-3	Benzene, 1-ethyl-2-methyl- (	35.28	700.	J
7.	122-00-9	Ethanone, 1-(4-methylphenyl)	38.74	500.	J
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

TOTAL ION CHROMATOGRAM



Data File: >EF545::D2 Quant Output File: ^EF545::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 10:40
Injected at: 890511 09:59

QUANT REPORT

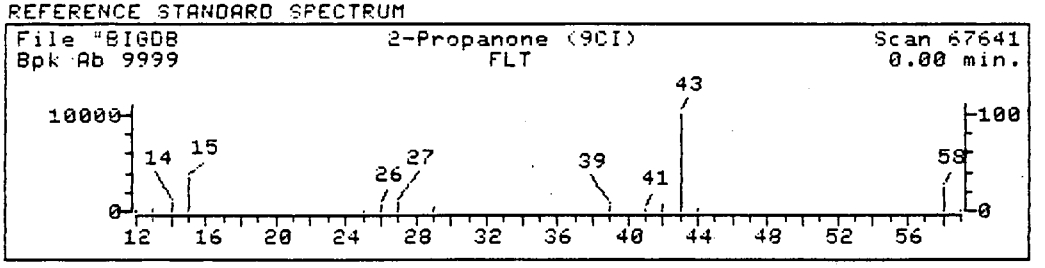
Operator ID: CARL Quant Rev: 6 Quant Time: 890511 10:40
Output File: ^EF545::QT Injected at: 890511 09:59
Data File: >EF545::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)

ID Fil : EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

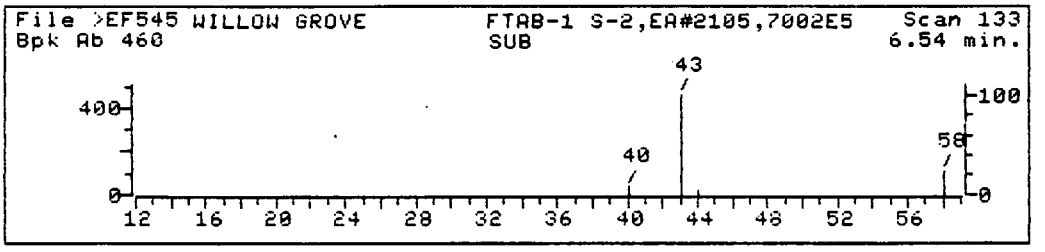
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.67	128.0	20587	50.00	UG/KG	91
7)	Acetone	6.54	43.0	4937	17.98	UG/KG	97
10)	1,1-Dichloroethane	9.45	63.0	3933	4.71	UG/KG	99
11)	1,2-Dichloroethene (total)	10.15	96.0	4984	11.65	UG/KG	82
13)	1,2-Dichloroethane-d4	11.27	65.0	42870	50.93	UG/KG	82
15)	*1,4-Difluorobenzene	18.64	114.0	70722	50.00	UG/KG	90
17)	1,1,1-Trichloroethane	12.59	97.0	128850	125.82	UG/KG	90
23)	Trichloroethene	15.62	130.0	30263	47.56	UG/KG	88
29)	*Chlorobenzene-d5	23.53	117.0	63825	50.00	UG/KG	94
32)	T trachloroethene	21.24	164.0	21962	32.32	UG/KG	94
34)	Toluene	22.52	92.0	2048	2.71	UG/KG	93
35)	Toluene-d8	22.32	98.0	68570	50.48	UG/KG	96
39)	Xylene (total)	29.42	106.0	8813M	13.69	UG/KG	62
40)	Bromofluorobenzene	27.87	95.0	71176	52.90	UG/KG	84

* Compound is ISTD

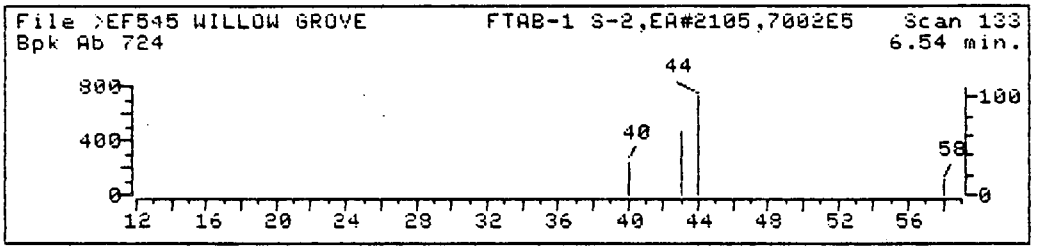
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



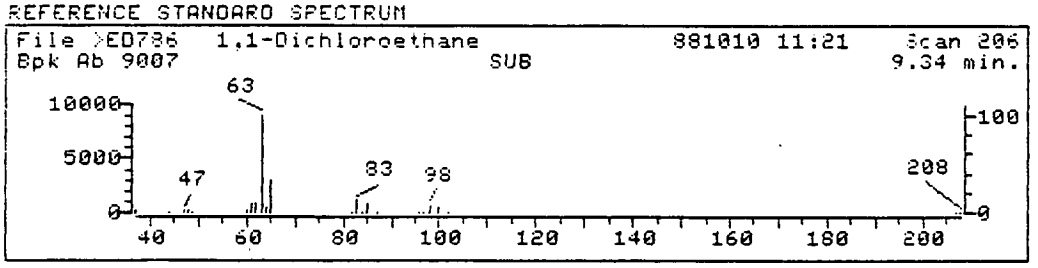
SAMPLE SPECTRUM (UNALTERED)



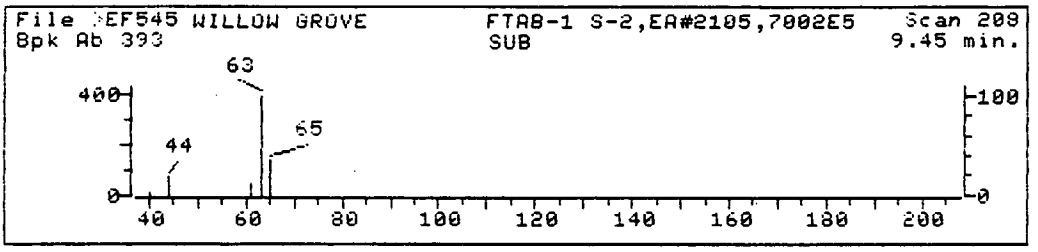
Data File: >EF545::D2 Quant Output File: ^EF545::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)
Quant Time: 890511 10:40 Quant ID File: EVOAS::BD
Injected at: 890511 09:59 Last Calibration: 890511 08:55

Compound No: 7
Compound Name: Acetone
Scan Number: 133
Retention Time: 6.54 min.
Quant Ion: 43.0
Area: 4937
Concentration: 17.98 UG/KG
q-value: 97

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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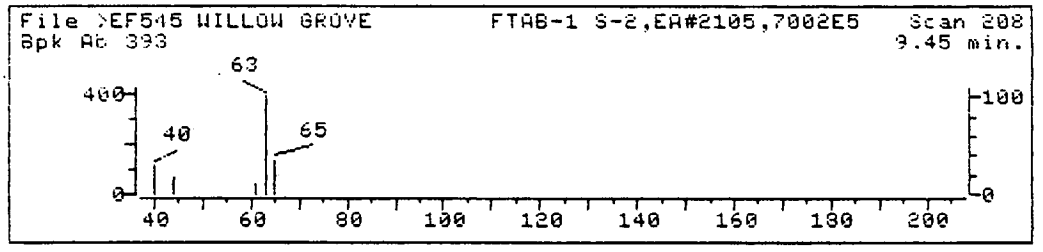
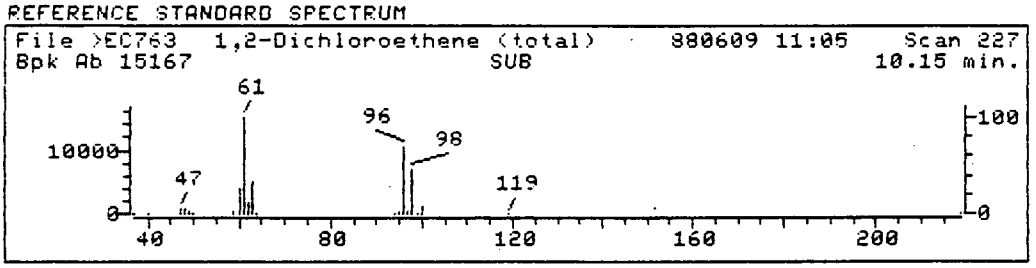


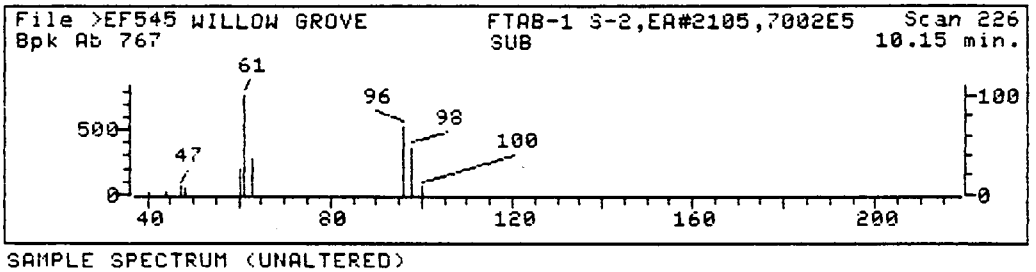
Data File: >EF545::D2 Quant Output File: ^EF545::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)
Quant Time: 890511 10:40 Quant ID File: EVDAS::8D
Injected at: 890511 09:59 Last Calibration: 890511 08:55

Compound No: 10
Compound Name: 1,1-Dichloroethane
Scan Number: 208
Retention Time: 9.45 min.
Quant Ion: 63.0
Area: 3933
Concentration: 4.71 UG/KG
q-value: 99

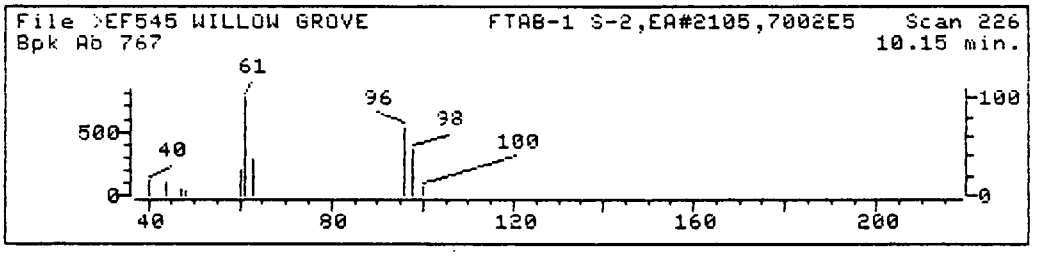
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



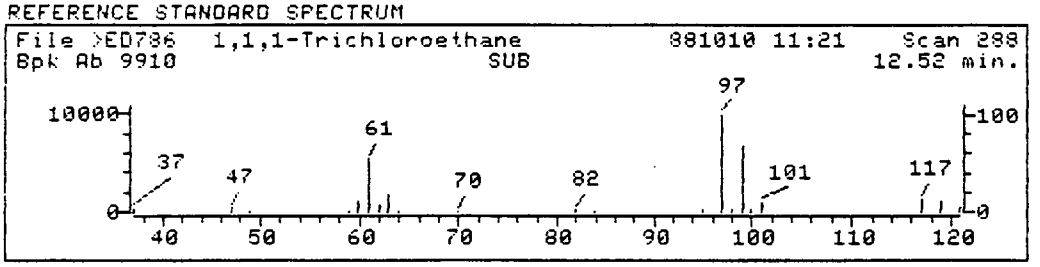
SAMPLE SPECTRUM (UNALTERED)



Data File: >EF545::D2 Quant Output File: ^EF545::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)
Quant Time: 890511 10:40 Quant ID File: EVOAS::BD
Injected at: 890511 09:59 Last Calibration: 890511 08:55

Compound No: 11
Compound Name: 1,2-Dichloroethene (total)
Scan Number: 226
Retention Time: 10.15 min.
Quant Ion: 96.0
Area: 4984
Concentration: 11.65 UG/KG
q-value: 82

REFERENCE STANDARD SPECTRUM



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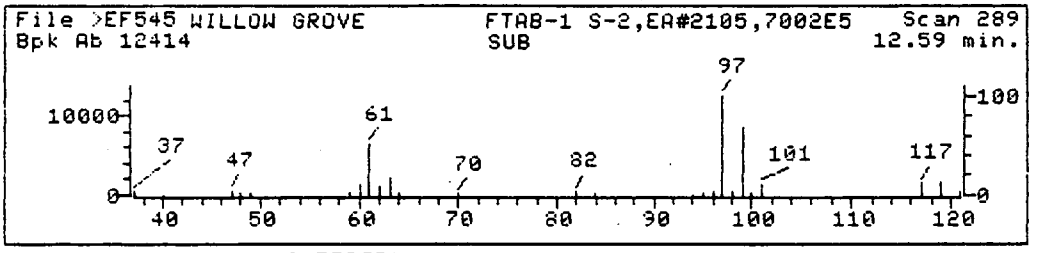

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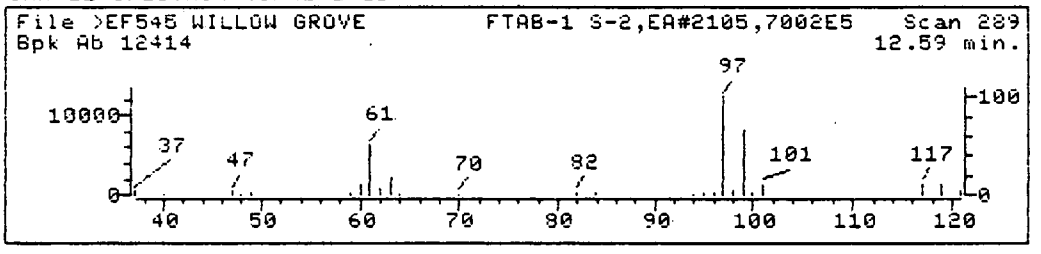
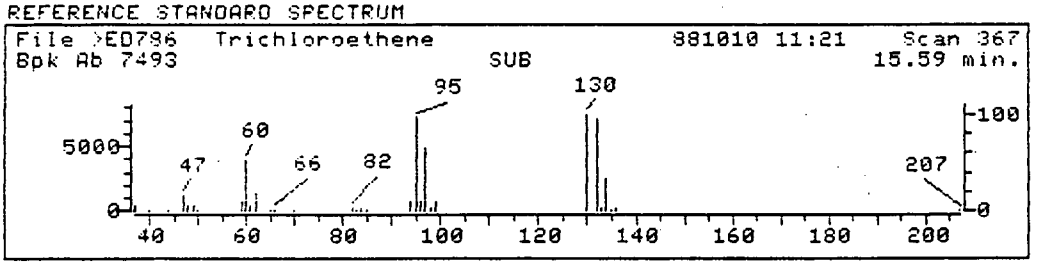


Data File: >EF545::D2 Quant Output File: ^EF545::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)
Quant Time: 890511 10:40 Quant ID File: EVOAS::BD
Injected at: 890511 09:59 Last Calibration: 890511 08:55

Compound No: 17
Compound Name: 1,1,1-Trichloroethane
Scan Number: 289
Retention Time: 12.59 min.
Quant Ion: 97.0
Area: 128850
Concentration: 125.82 UG/KG
q-value: 90

REFERENCE STANDARD SPECTRUM



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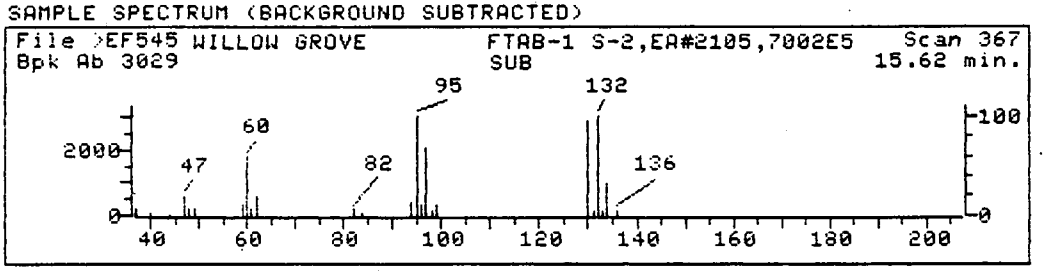

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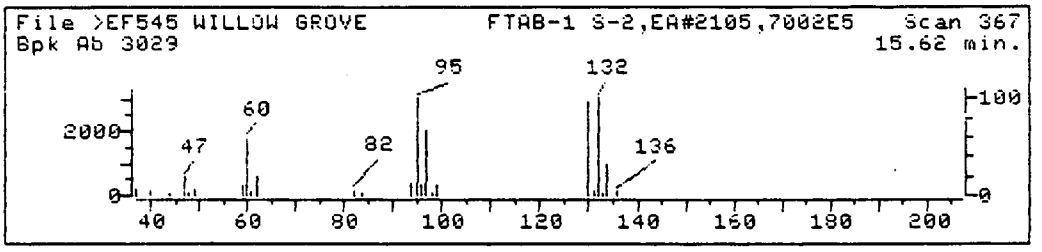
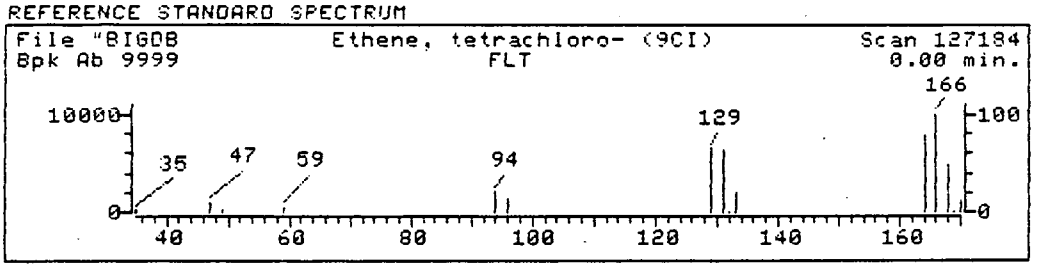


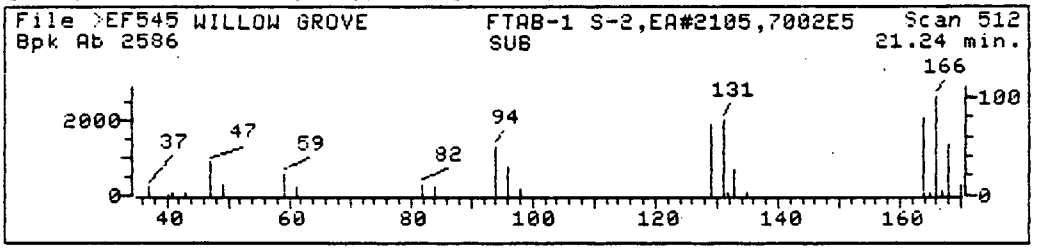
Data File: >EF545::D2 Quant Output File: ^EF545::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)
Quant Time: 890511 10:40 Quant ID File: EVOAS::BD
Injected at: 890511 09:59 Last Calibration: 890511 08:55

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 367
Retention Time: 15.62 min.
Quant Ion: 130.0
Ar a: 30263
Concentration: 47.56 UG/KG
q-value: 88

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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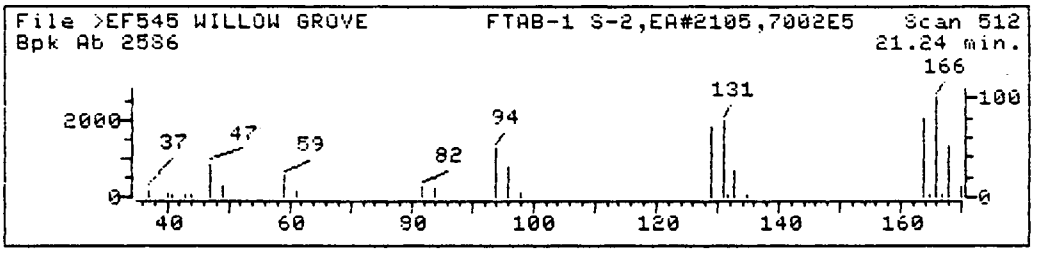
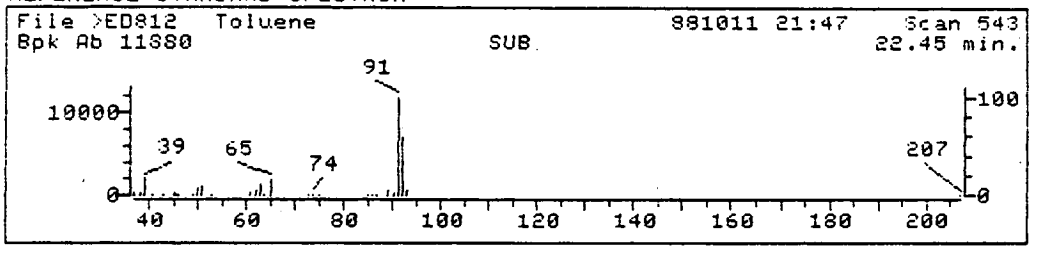


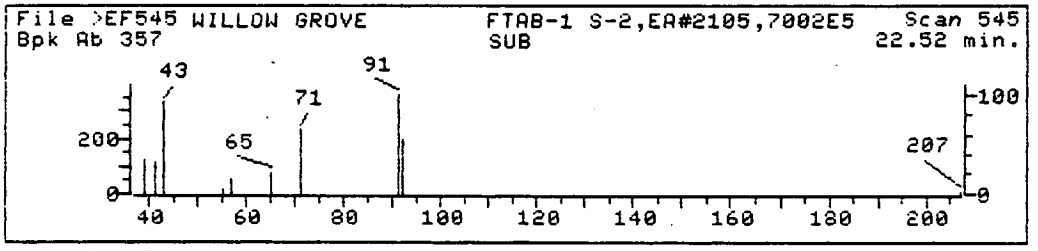
Data File: >EF545::D2 Quant Output File: ^EF545::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)
Quant Time: 890511 10:40 Quant ID File: EVOAS::BD
Injected at: 890511 09:59 Last Calibration: 890511 08:55

Compound No: 32
Compound Name: Tetrachloroethene
Scan Number: 512
Retention Time: 21.24 min.
Quant Ion: 164.0
Area: 21962
Concentration: 32.32 UG/KG
q-value: 94

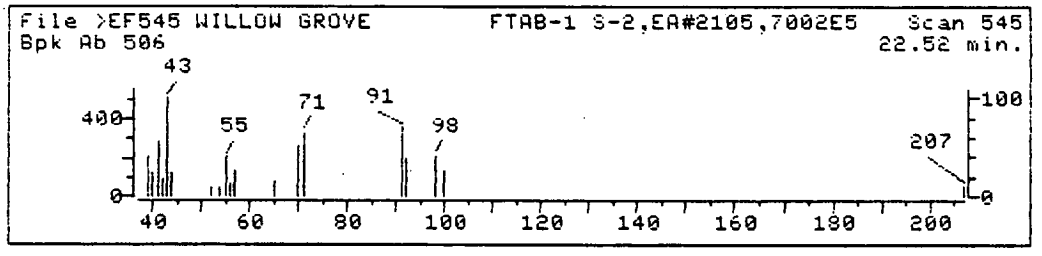
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



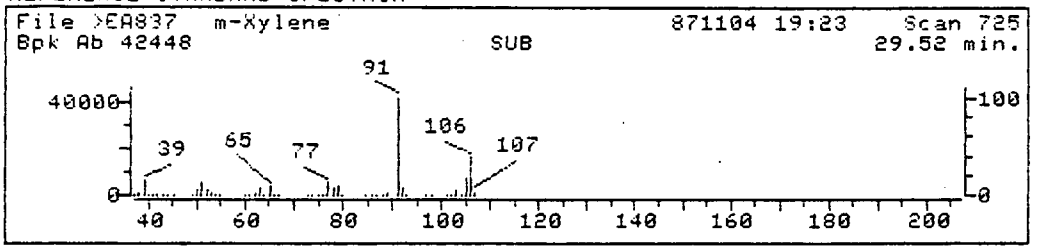
SAMPLE SPECTRUM (UNALTERED)



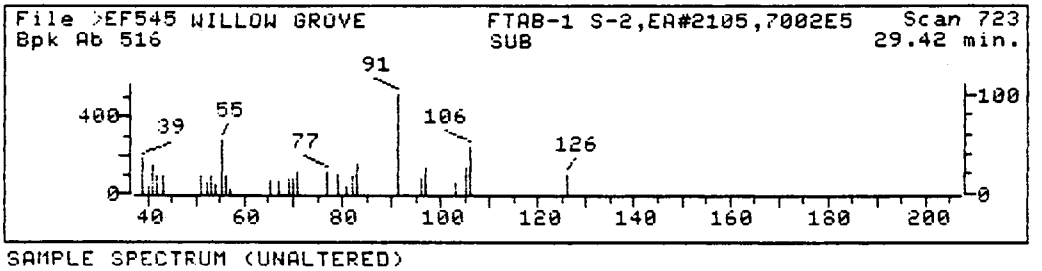
Data File: >EF545::D2 Quant Output File: ^EF545::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)
Quant Time: 890511 10:40 Quant ID File: EVOAS::BD
Injected at: 890511 09:59 Last Calibration: 890511 08:55

Compound No: 34
Compound Name: Toluene
Scan Number: 545
Retention Time: 22.52 min.
Quant Ion: 92.0
Area: 2048
Concentration: 2.71 UG/KG
q-value: 93

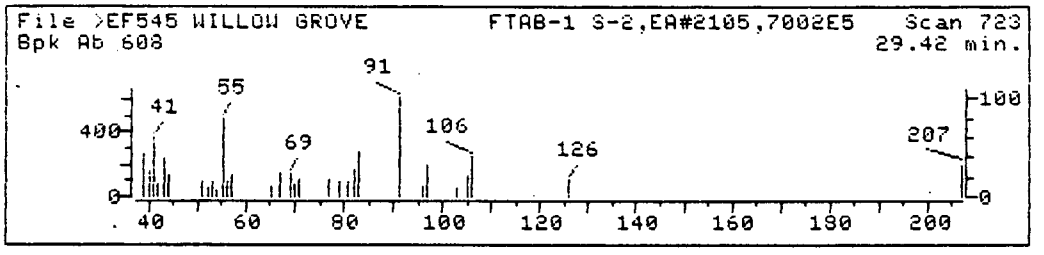
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

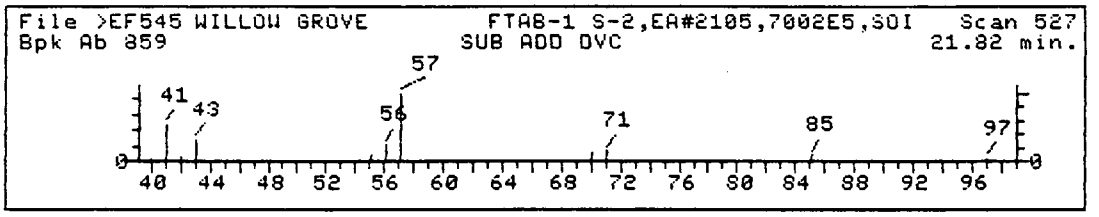


SAMPLE SPECTRUM (UNALTERED)



Data File: >EF545::D2 Quant Output File: ^EF545::QT
Name: WILLOW GROVE
Misc: FTAB-1 S-2,EA#2105,7002E5,SOIL (1/25 DIL)
Quant Time: 890511 10:40 Quant ID File: EVOAS::BD
Injected at: 890511 09:59 Last Calibration: 890511 08:55

Compound No: 39
Compound Name: Xylene (total)
Scan Number: 723
Retention Time: 29.42 min.
Quant Ion: 106.0
Area: 4884
Concentration: **13.69** UG/KG
q-value: 92

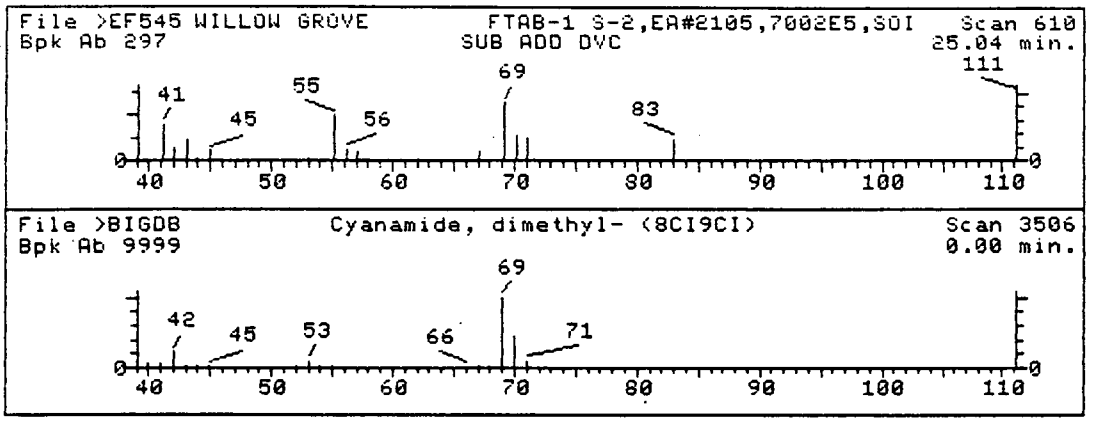


Retention time = 21.82 UNKNOWN

Area = 47379.00 Tentative Concentration is 9.00

Sample file: >EF545 Spectrum #: 527

No data base entries were retrieved.



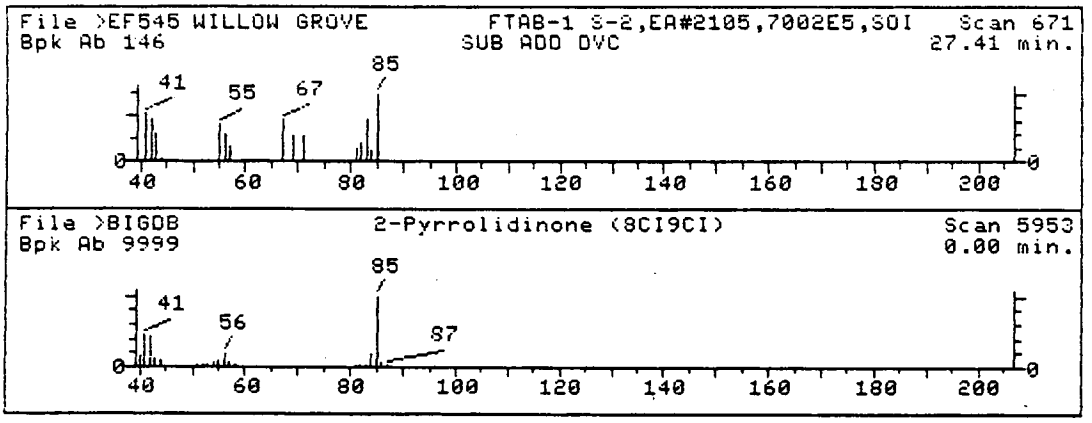
Retention time = 25.04 UNKNOWN

Area = 37869.00 Tentative Concentration is 7.00

1. Cyanamide, dimethyl- (8CI9CI) 70 C3H6N2

Sample file: >EF545 Spectrum #: 610
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	20*	1467794	3506	"BIGDB	28	55	2	0	82	54	5	14



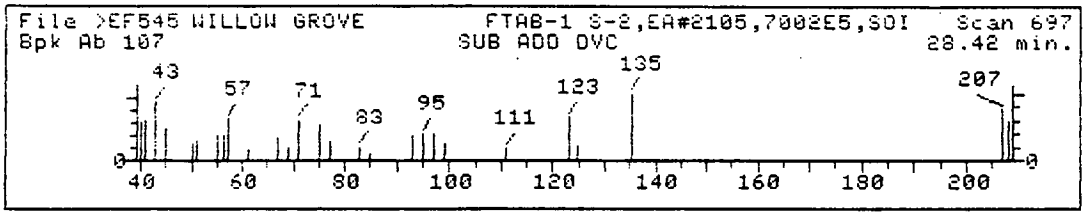
Retention time = 27.41 VNKNWN

Area = 31667.00 Tentative Concentration is 6.00

1. 2-Pyrrolidinone (8CI9CI) 85 C4H7NO

Sample file: >EF545 Spectrum #: 671
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	15*	616455	5953	"BIGDB	25	66	2	0	100	60	3	14

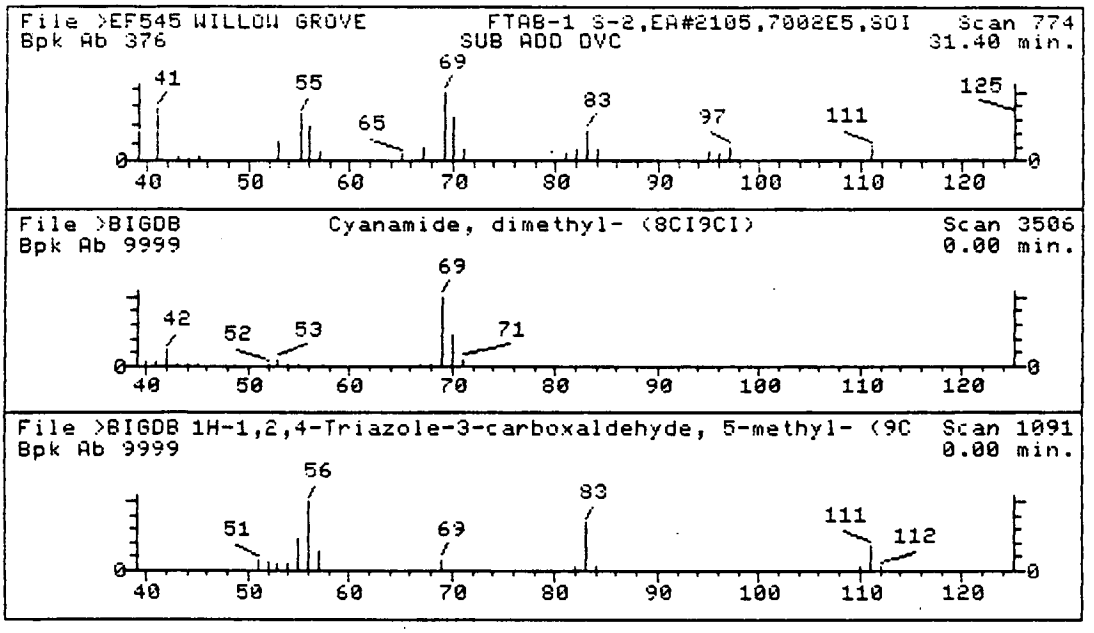


Retention time = 28.42 UNKNOWN

Area = 46944.00 Tentative Concentration is 9.00

Sample file: >EF545 Spectrum #: 697

No data base entries were retrieved.



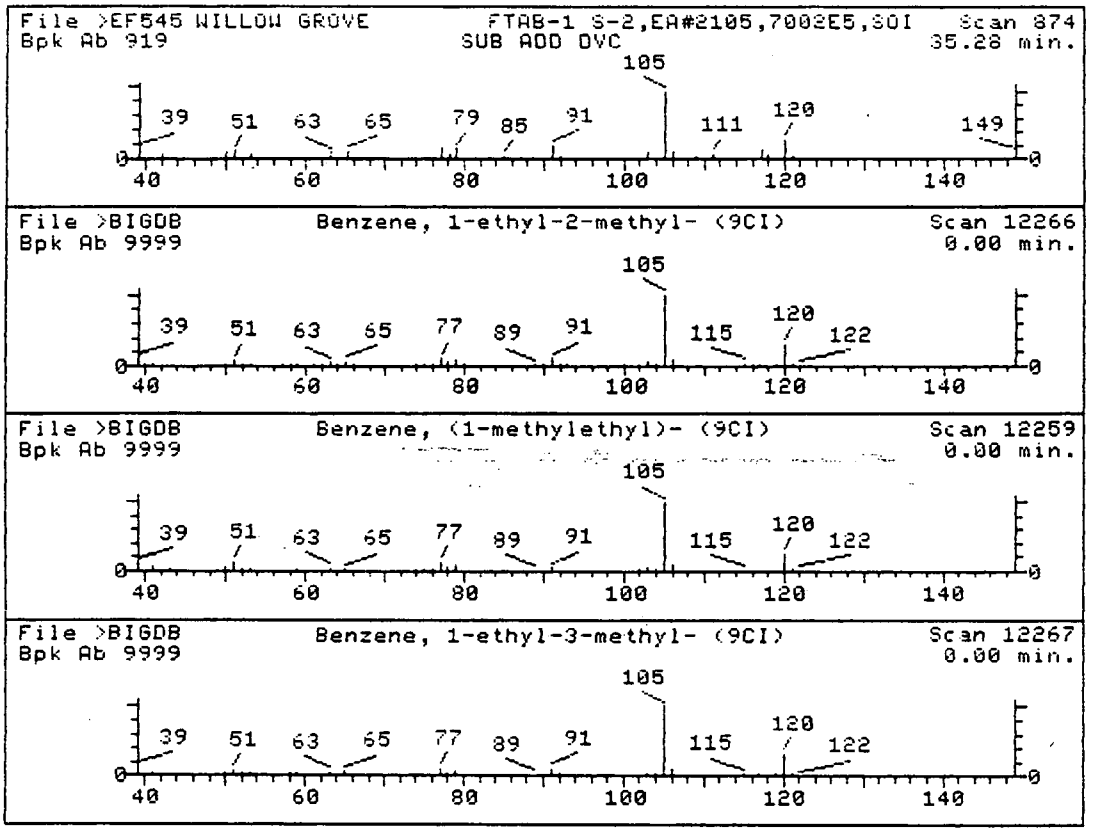
Retention time = 31.40 UNKNOWN

Area = 82903.00 Tentative Concentration is 16.00

1. Cyanamide, dimethyl- (8CI9CI) 70 C3H6N2
2. 1H-1,2,4-Triazole-3-carboxaldehyde, 5-methyl- (9CI) 111 C4H5N3O

Sample file: >EF545 Spectrum #: 774
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	11*	1467794	3506	"BIGDB	25	58	3	0	100	61	2	13
2.	11*	56804989	1091	"BIGDB	25	69	3	0	50	63	2	13



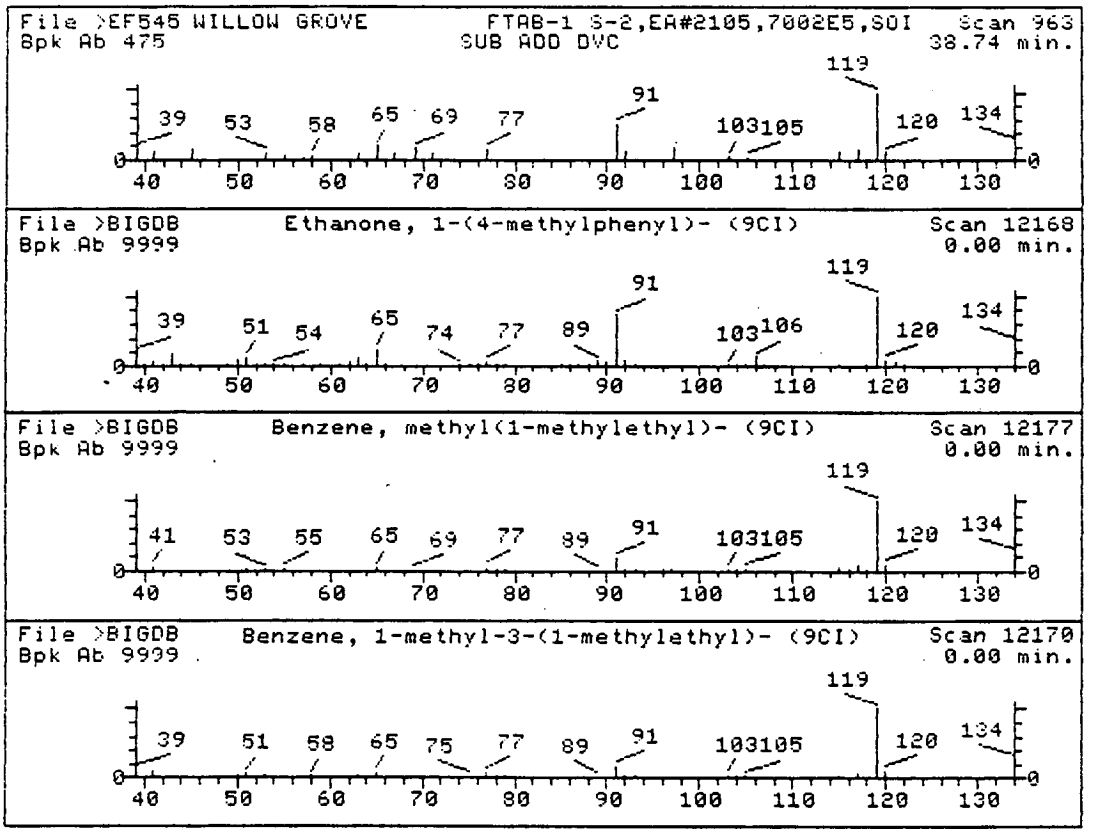
Retention time = 35.28

Area = 127018.0 Tentative Concentration is 24.00

1.	Benzene, 1-ethyl-2-methyl- (9CI)	120	C9H12
2.	Benzene, (1-methylethyl)- (9CI)	120	C9H12
3.	Benzene, 1-ethyl-3-methyl- (9CI)	120	C9H12
4.	B nzene, 1-ethyl-4-methyl- (9CI)	120	C9H12
5.	Benzene, (1-methyl-3-butenyl)- (9CI)	146	C11H14

Sample file: >EF545 Spectrum #: 874
Search speed: 2 Tilting option: S No. of ion ranges searched: 56

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	63*	611143	12266	"BIGDB	53	32	2	3	100	19	30	30
2.	59*	98828	12259	"BIGDB	50	37	2	0	95	22	27	31
3.	47*	620144	12267	"BIGDB	36	51	2	0	92	24	17	18
4.	44*	622968	12268	"BIGDB	30	55	2	0	100	24	17	15
5.	28	10340495	9870	"BIGDB	40	40	2	0	100	38	10	14



Retention time = 38.74

Area = 89452.00 Tentative Concentration is 17.00

1. Ethanone, 1-(4-methylphenyl)- (9CI) 134 C9H10O
2. Benzene, methyl(1-methylethyl)- (9CI) 134 C10H14
3. Benzene, 1-methyl-3-(1-methylethyl)- (9CI) 134 C10H14
4. Benzene, 2-ethyl-1,3-dimethyl- (9CI) 134 C10H14
5. Benzene, 1-ethyl-2,3-dimethyl- (9CI) 134 C10H14
6. Benzene, 4-ethyl-1,2-dimethyl- (9CI) 134 C10H14
7. Benzene, (1,1-dimethylethyl)- (9CI) 134 C10H14

Sample file: >EF545 Spectrum #: 963
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	42*	122009	12168	"BIGDB	46	57	3	0	73	25	17	13
2.	38*	25155151	12177	"BIGDB	31	59	2	0	100	30	14	15
3.	32*	535773	12170	"BIGDB	31	58	2	0	100	34	12	15
4.	32*	2870044	12174	"BIGDB	31	58	2	0	98	35	12	15
5.	32*	933982	12172	"BIGDB	30	61	2	0	89	35	12	15
6.	31*	934805	12173	"BIGDB	31	62	2	0	94	35	12	14
7.	30*	98066	12167	"BIGDB	37	58	3	0	84	30	12	13

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAB2S3

Lab Nam : EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2107

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF526

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 14. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	4.	J
67-64-1	Acetone	53.	
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	3.	J
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	5.	J
108-90-7	Chlorobenzene	4.	J
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAB2S3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2107

Sampl wt/vol: 5.0 (g/mL) G Lab File ID: EF526

L vel: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 14. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	99-87-6	Benzene, 1-methyl-4-(1-methy	23.13	20.	J
2.	25155-15-1	Benzene, methyl(1-methylethy	24.72	10.	J
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
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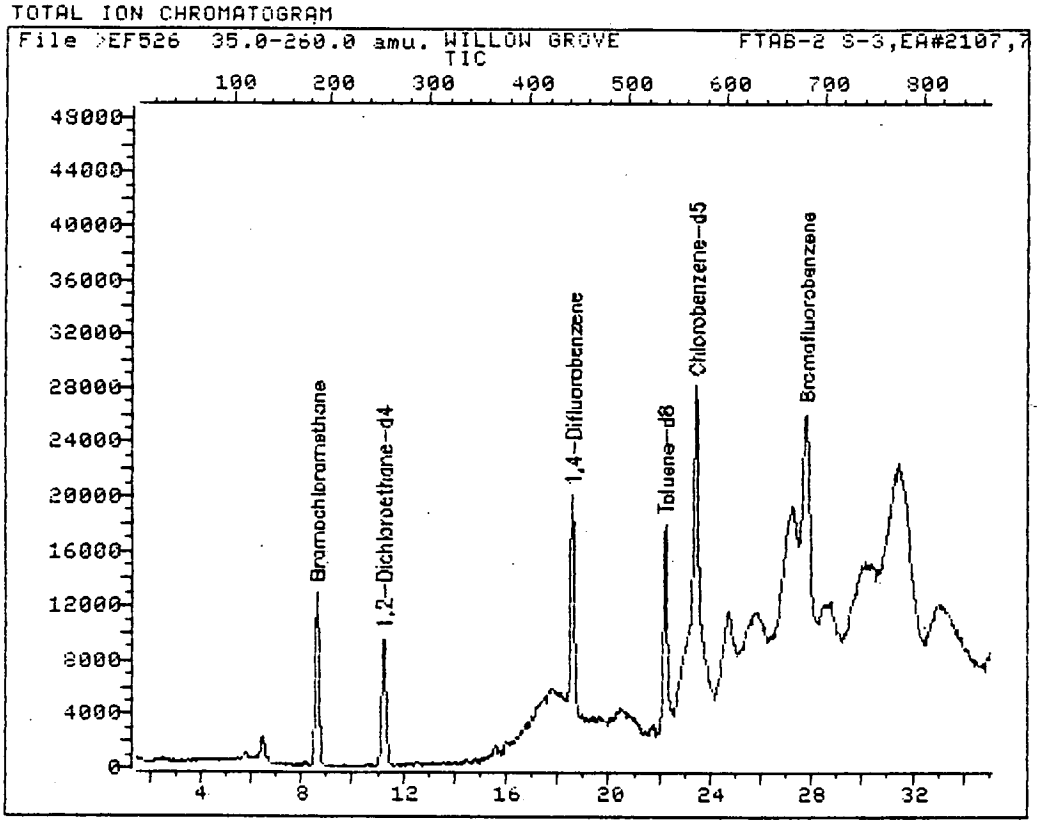
27.					
28.					
29.					
30.					

TOTAL ION CHROMATOGRAM



Data File: >EF526::D2 Quant Output File: ^EF526::QT
Name: WILLOW GROVE
Misc: FTAB-2 S-3,EA#2107,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 19:40
Injected at: 890509 19:05

QUANT REPORT

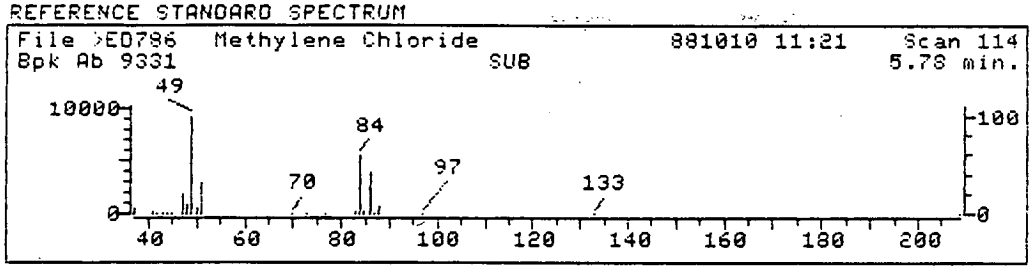
Operator ID: CARL Quant Rev: 6 Quant Time: 890509 19:40
Output File: ^EF526::QT Injected at: 890509 19:05
Data Fil : >EF526::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: FTAB-2 S-3,EA#2107,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

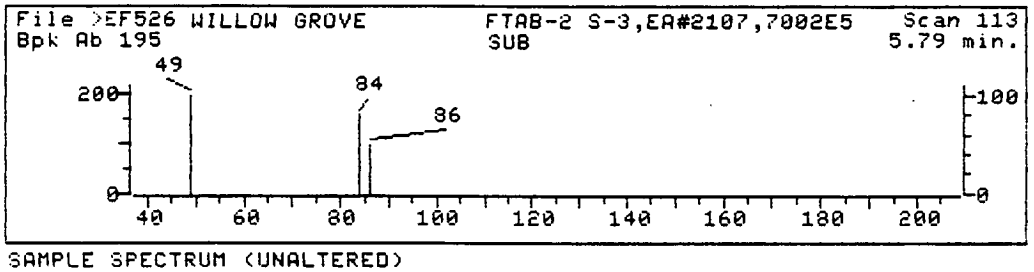
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.62	128.0	17747	50.00	UG/KG	90
6)	Methylene Chloride	5.79	84.0	1237	3.37	UG/KG	95
7)	Acetone	6.45	43.0	10422	46.06	UG/KG	90
13)	1,2-Dichloroethane-d4	11.22	65.0	36781	49.70	UG/KG	86
15)	*1,4-Difluorobenzene	18.59	114.0	62855	50.00	UG/KG	92
23)	Trichloroethene	15.57	130.0	1394	2.41	UG/KG	90
29)	*Chlorobenzene-d5	23.44	117.0	60625	50.00	UG/KG	72
34)	Toluene	22.43	92.0	2808	3.96	UG/KG	99
35)	Toluene-d8	22.24	98.0	61746	47.69	UG/KG	96
36)	Chlorobenzene	23.56	112.0	3261	3.05	UG/KG	71
40)	Bromofluorobenzene	27.79	95.0	57793	46.23	UG/KG	89

* Compound is ISTD

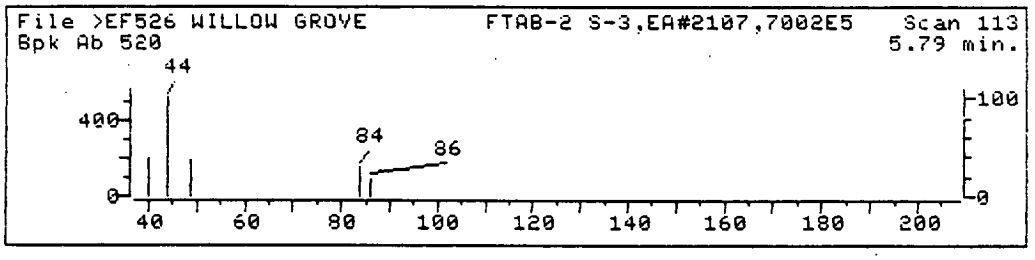
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



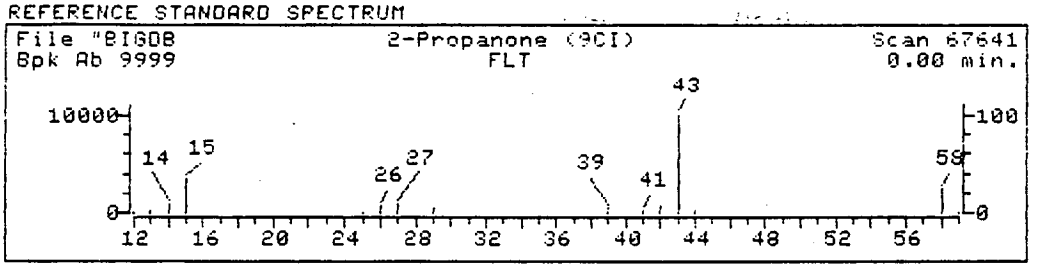
SAMPLE SPECTRUM (UNALTERED)



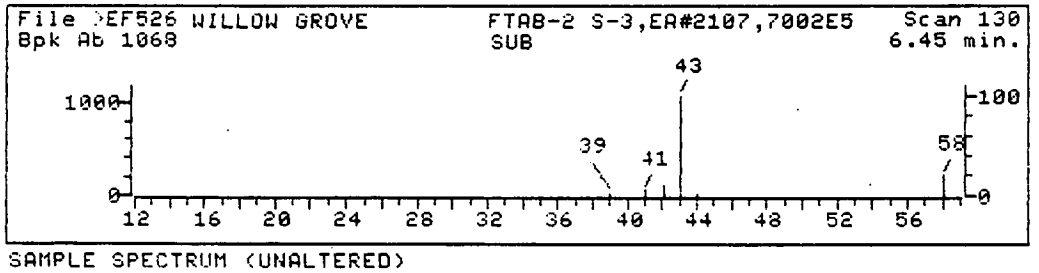
Data File: >EF526::D2 Quant Output File: ^EF526::QT
Name: WILLOW GROVE
Misc: FTAB-2 S-3,EA#2107,7002E5,SOIL,5.0GM
Quant Time: 890509 19:40 Quant ID File: EVDAS::BD
Injected at: 890509 19:05 Last Calibration: 890509 13:58

Compound No: 6
Compound Name: Methylene Chloride
Scan Number: 113
Retention Time: 5.79 min.
Quant Ion: 84.0
Area: 1237
Concentration: 3.37 UG/KG
q-value: 95

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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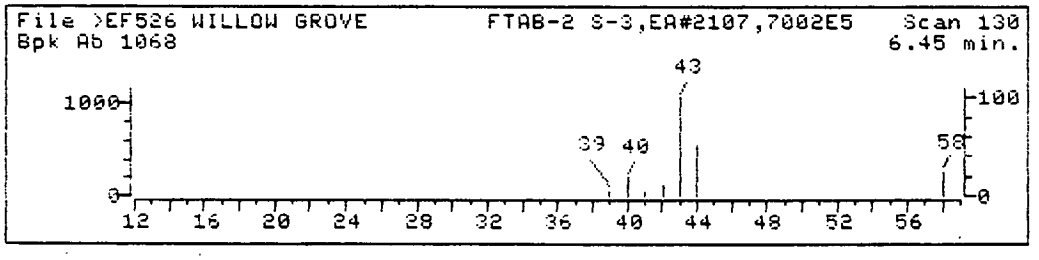
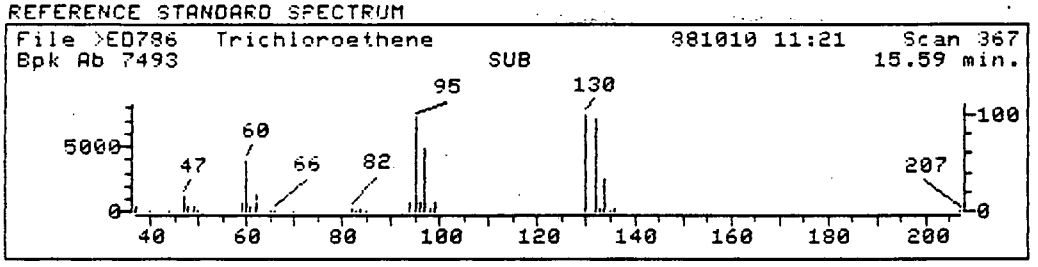


Data File: >EF526::D2 Quant Output File: ^EF526::QT
Name: WILLOW GROVE
Misc: FTAB-2 S-3,EA#2107,7002E5,SOIL,5.0GM
Quant Time: 890509 19:40 Quant ID File: EVOAS::BD
Injected at: 890509 19:05 Last Calibration: 890509 13:58

Compound No: 7
Compound Name: Acetone
Scan Number: 130
Retention Time: 6.45 min.
Quant Ion: 43.0
Area: 10422
Concentration: 46.06 UG/KG
q-value: 90

REFERENCE STANDARD SPECTRUM



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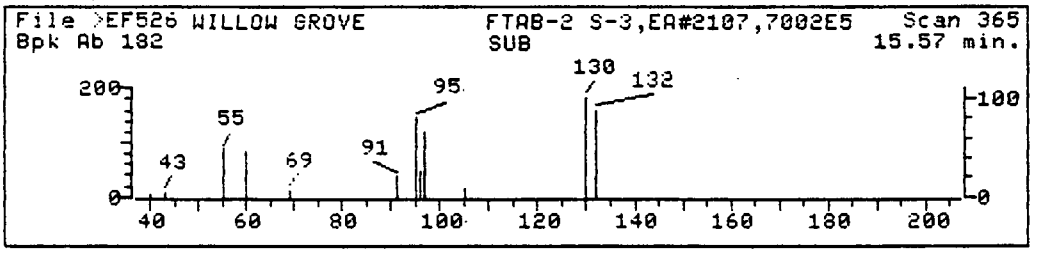
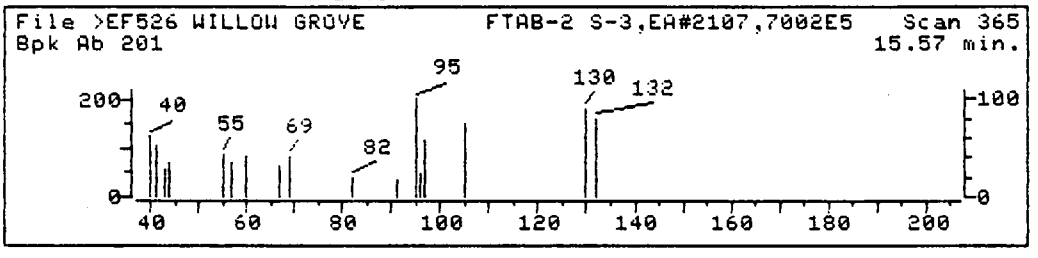


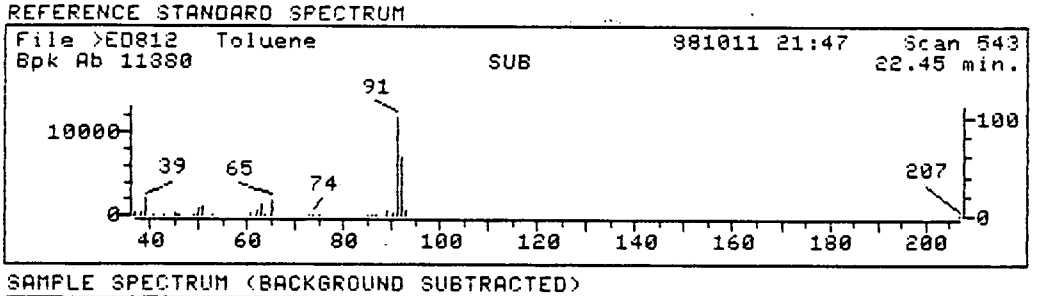
SAMPLE SPECTRUM (UNALTERED)



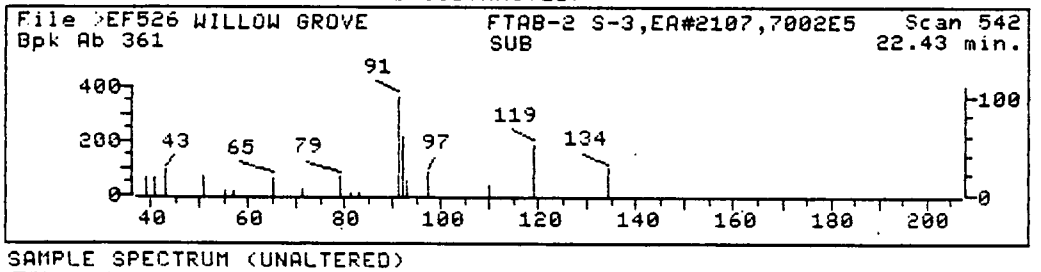
Data File: >EF526::D2 Quant Output File: ^EF526::QT
Name: WILLOW GROVE
Misc: FTAB-2 S-3,EA#2107,7002E5,SOIL,5.0GM
Quant Time: 890509 19:40 Quant ID File: EVOAS::BD
Injected at: 890509 19:05 Last Calibration: 890509 13:58

Compound No: 23
Compound Name: Trichloroethene
Scan Number: 365
Retention Time: 15.57 min.
Quant Ion: 130.0
Area: 1394
Concentration: 2.41 UG/KG
q-value: 90

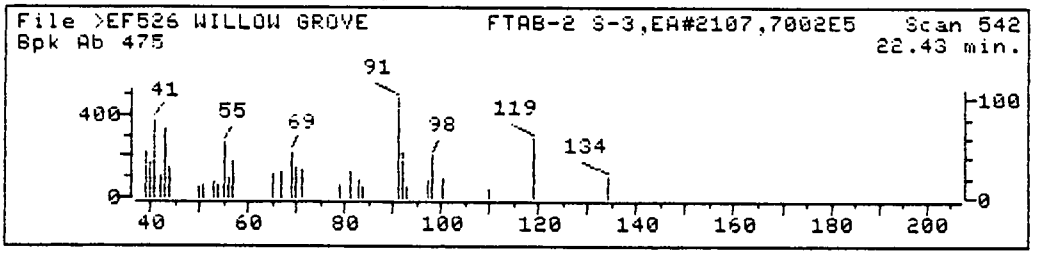
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



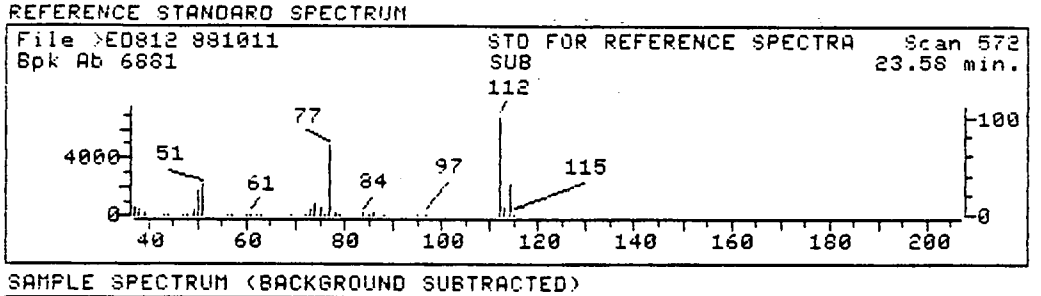
SAMPLE SPECTRUM (UNALTERED)



Data File: >EF526::D2 Quant Output File: ^EF526::QT
Name: WILLOW GROVE
Misc: FTAB-2 S-3,EA#2107,7002E5,SOIL;5.0GM
Quant Time: 890509 19:40 Quant ID File: EVOAS::BD
Injected at: 890509 19:05 Last Calibration: 890509 13:58

Compound No: 34
Compound Name: Toluene
Scan Number: 542
Retention Time: 22.43 min.
Quant Ion: 92.0
Area: 2808
Concentration: 3.96 UG/KG
q-value: 99

REFERENCE STANDARD SPECTRUM



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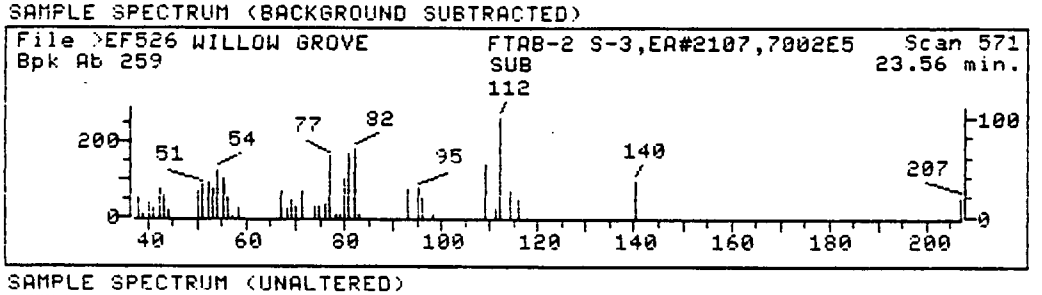

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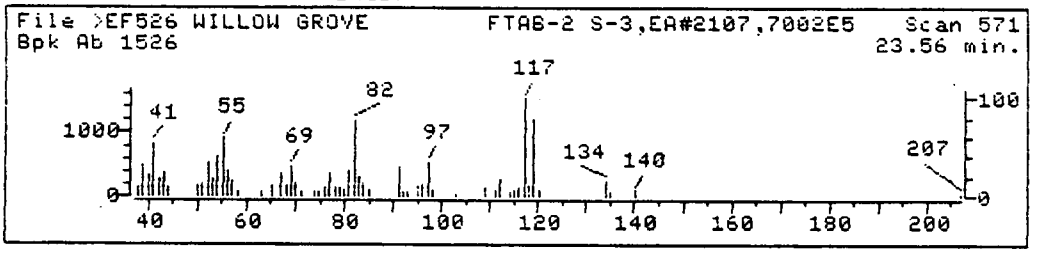
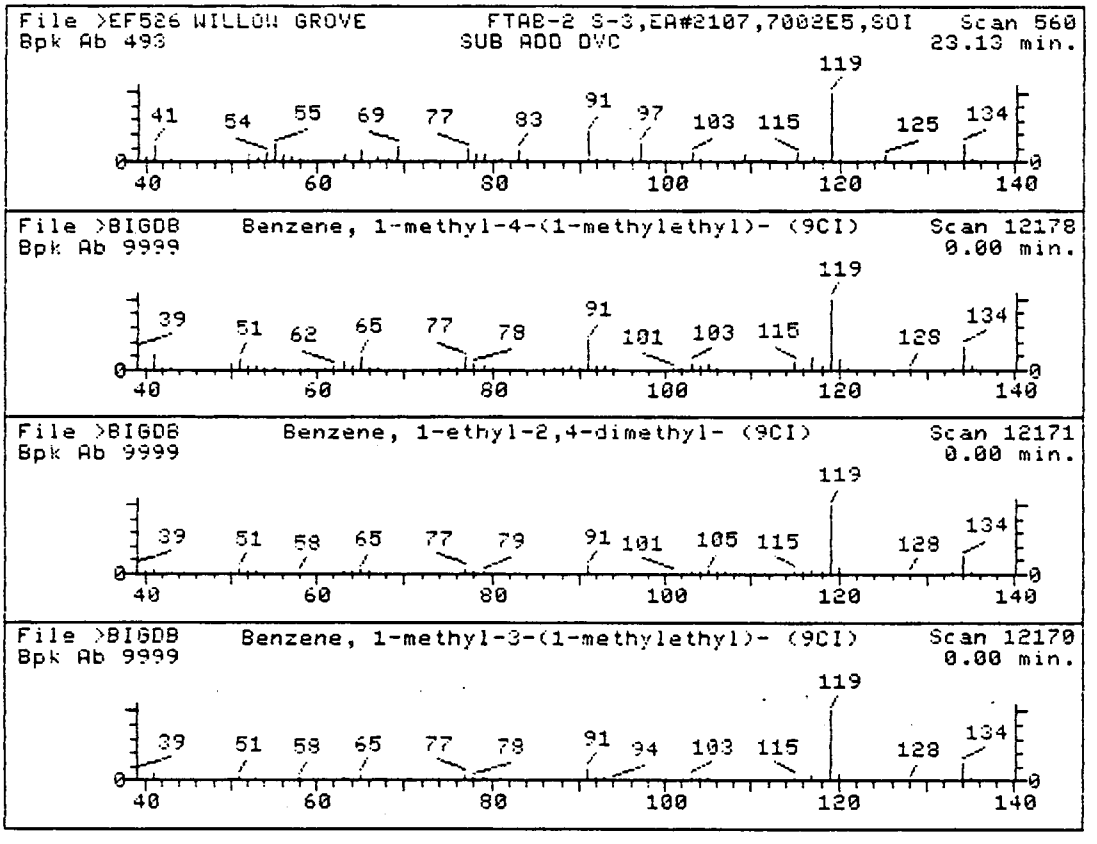


Data File: >EF526::D2 Quant Output File: ^EF526::QT
Name: WILLOW GROVE
Misc: FTAB-2 S-3,EA#2107,7002E5,SOIL,5.0GM
Quant Time: 890509 19:40 Quant ID File: EVDAS::BD
Injected at: 890509 19:05 Last Calibration: 890509 13:58

Compound No: 36
Compound Name: Chlorobenzene
Scan Number: 571
Retention Time: 23.56 min.
Quant Ion: 112.0
Area: 3261
Concentration: 3.05 UG/KG
q-value: 71



Retention time = 23.13

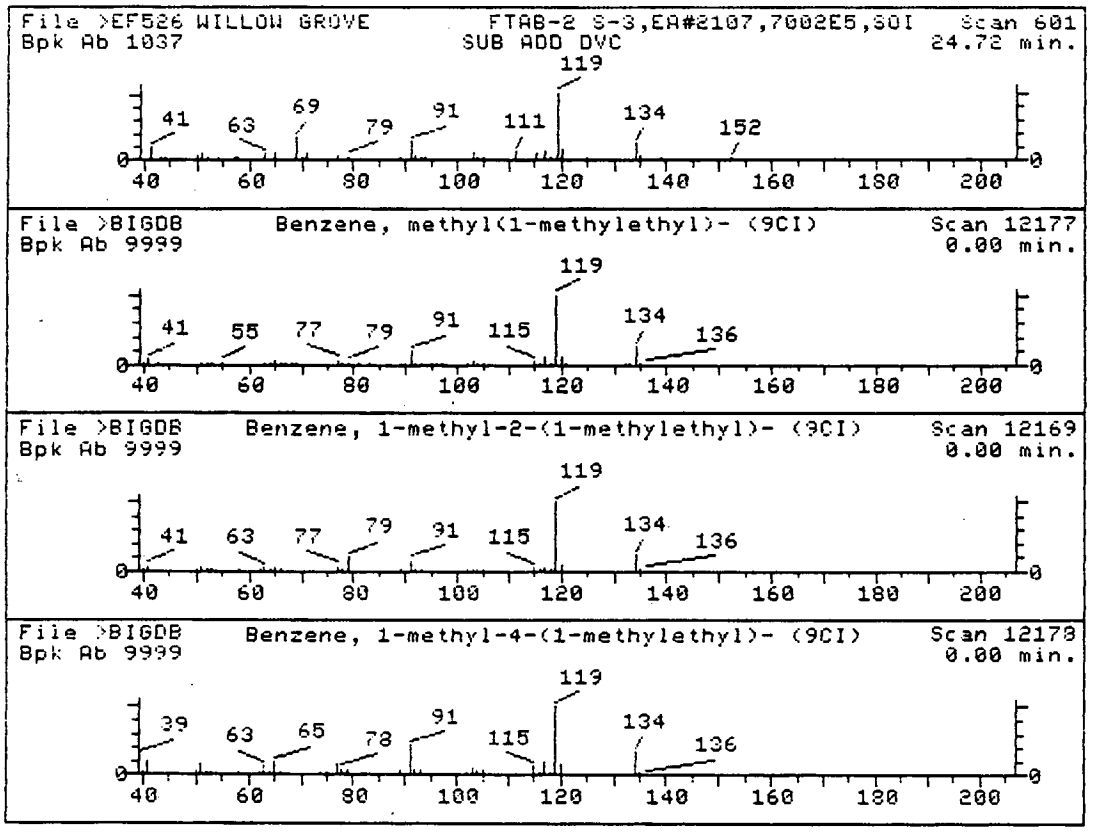
Area = 175857.0 Tentative Concentration is 14.00

1.	Benzene, 1-methyl-4-(1-methylethyl)- (9CI)	134	C10H14
2.	Benzene, 1-ethyl-2,4-dimethyl- (9CI)	134	C10H14
3.	Benzene, 1-methyl-3-(1-methylethyl)- (9CI)	134	C10H14
4.	Benzene, 2-ethyl-1,3-dimethyl- (9CI)	134	C10H14
5.	Benzene, methyl(1-methylethyl)- (9CI)	134	C10H14
6.	Benzene, 1-methyl-2-(1-methylethyl)- (9CI)	134	C10H14
7.	Ethanone, 1-(2-methylphenyl)- (9CI)	134	C9H10O

Sample file: >EF526 Spectrum #: 560
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	50*	99876	12178	"BIGDB	63	42	2	0	78	36	19	41
2.	28*	874419	12171	"BIGDB	33	55	2	0	96	43	19	16

3.	28*	535773	12170	"BIGDB	33	56	2	0	100	42	8	16
4.	28*	2870044	12174	"BIGDB	33	56	2	0	93	43	8	16
5.	28*	25155151	12177	"BIGDB	27	63	2	0	100	40	10	14
6.	25*	527844	12169	"BIGDB	33	59	3	0	100	42	8	13
7.	11*	577162	14486	"BIGDB	34	45	2	0	44	65	2	17



Retention time = 24.72

Area = 118713.0 Tentative Concentration is 10.00

1. Benzene, methyl(1-methylethyl)- (9CI) 134 C10H14
2. Benzene, 1-methyl-2-(1-methylethyl)- (9CI) 134 C10H14
3. Benzene, 1-methyl-4-(1-methylethyl)- (9CI) 134 C10H14
4. Benzene, 2-ethyl-1,4-dimethyl- (9CI) 134 C10H14
5. Benzene, 4-ethyl-1,2-dimethyl- (9CI) 134 C10H14
6. Benzene, (1,1-dimethylethyl)- (9CI) 134 C10H14
7. Benzene, 2-ethyl-1,3-dimethyl- (9CI) 134 C10H14

Sample file: >EF526 Spectrum #: 601
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	63*	25155151	12177	"BIGDB	51	39	2	0	100	19	30	33
2.	52*	527844	12169	"BIGDB	33	59	2	0	100	20	20	15
3.	51*	99876	12178	"BIGDB	79	26	1	-1	58	45	17	54
4.	48*	1758889	12181	"BIGDB	40	54	2	0	78	24	17	19
5.	44*	934805	12173	"BIGDB	34	59	2	0	89	24	17	15
6.	43*	98066	12167	"BIGDB	42	53	3	0	100	25	17	14
7.	43*	2870044	12174	"BIGDB	29	60	2	0	93	24	17	14

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAB3S1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2150

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF527

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 13. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11.	U
74-83-9	Bromomethane	11.	U
75-01-4	Vinyl Chloride	11.	U
75-00-3	Chloroethane	11.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	11.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	11.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	11.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	11.	U
591-78-6	2-Hexanone	11.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenz n	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAB3S1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2150

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF527

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 13. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	622-96-8	Benzene, 1-ethyl-4-methyl- (	24.31	100.	J
2.	124-18-5	Decane (8CI9CI)	28.97	600.	J
3.					
4.					
5.					
6.					
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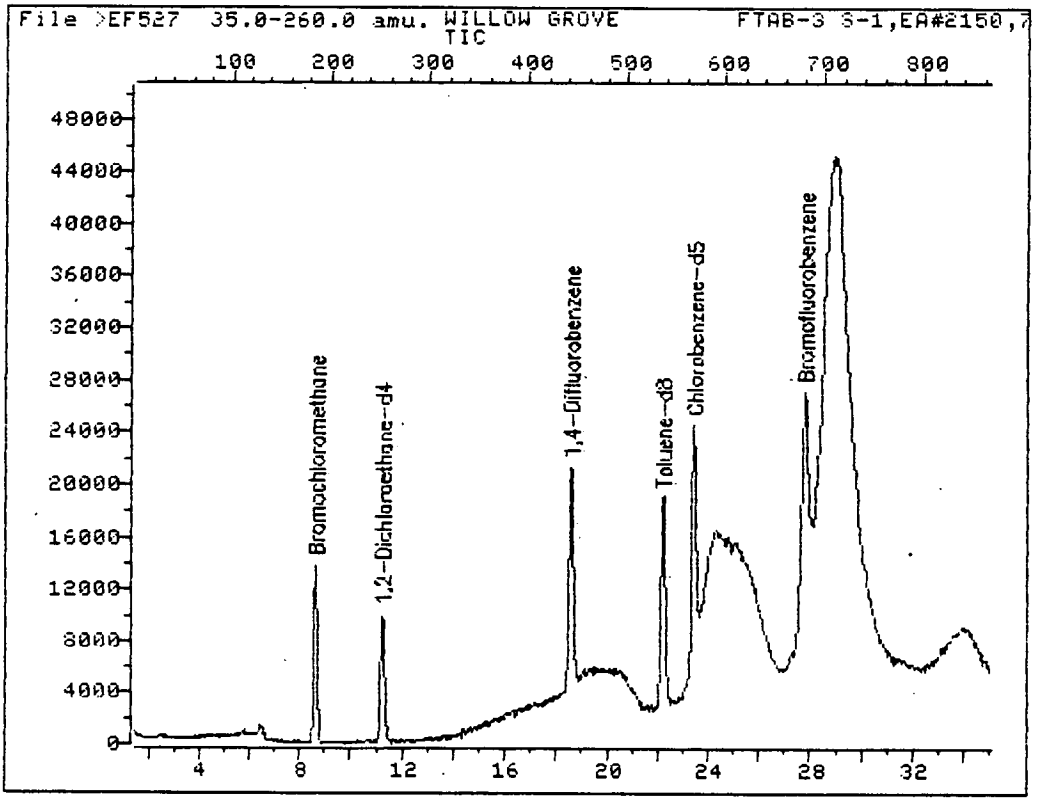
29.					
30.					

TOTAL ION CHROMATOGRAM



Data File: >EF527::D2 Quant Output File: ^EF527::QT
Name: WILLOW GROVE
Misc: FTAB-3 S-1,EA#2150,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 20:21
Injected at: 890509 19:45

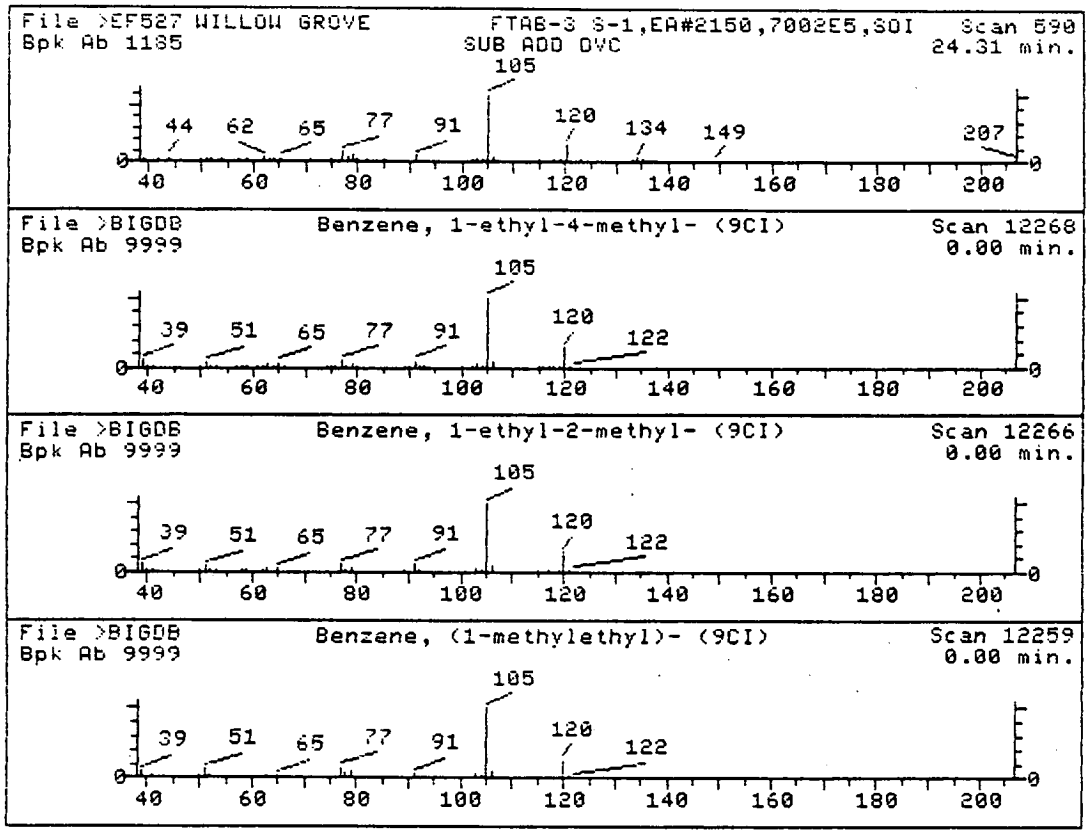
QUANT REPORT

Op rator ID: CARL Quant Rev: 6 Quant Time: 890509 20:21
Output File: ^EF527::QT Injected at: 890509 19:45
Data File: >EF527::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: FTAB-3 S-1,EA#2150,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.63	128.0	18600	50.00	UG/KG	86
13)	1,2-Dichloroethane-d4	11.23	65.0	39973	51.53	UG/KG	83
15)	*1,4-Difluorobenzene	18.56	114.0	69393	50.00	UG/KG	90
29)	*Chlorobenzene-d5	23.45	117.0	62349	50.00	UG/KG	95
35)	Toluene-d8	22.21	98.0	64842	48.70	UG/KG	98
40)	Bromofluorobenzene	27.80	95.0	61895	48.14	UG/KG	92

* Compound is ISTD



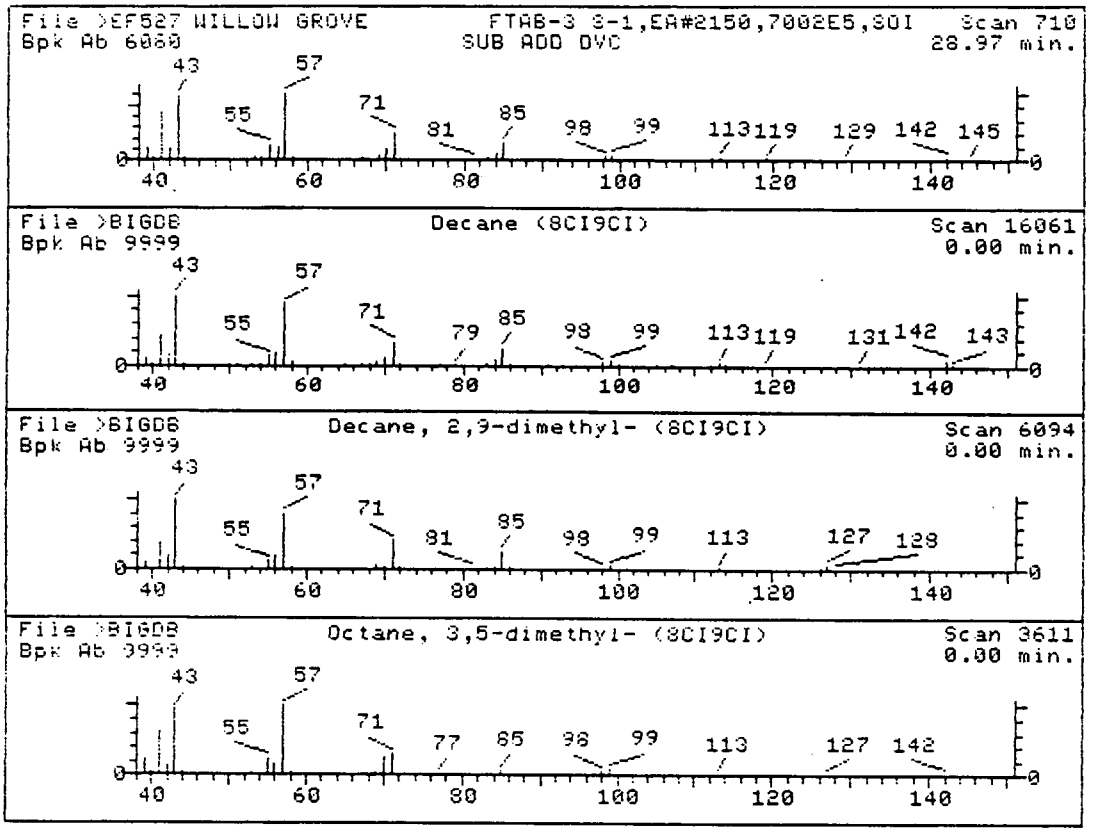
Retention time = 24.31

Area = 582548.0 Tentative Concentration is 110.00

1.	Benzene, 1-ethyl-4-methyl- (9CI)	120	C9H12
2.	Benzene, 1-ethyl-2-methyl- (9CI)	120	C9H12
3.	Benzene, (1-methylethyl)- (9CI)	120	C9H12
4.	Benzene, 1-ethyl-3-methyl- (9CI)	120	C9H12
5.	Benzene, 1-methyl-2-propyl- (9CI)	134	C10H14
6.	Benzene, 1-methyl-3-propyl- (9CI)	134	C10H14
7.	Benzene, 1-methyl-4-propyl- (9CI)	134	C10H14

Sample file: >EF527 Spectrum #: 590
Search speed: 2 Tilting option: S No. of ion ranges searched: 63

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	73*	622968	12268	"BIGDB	63	22	1	0	80	24	32	69
2.	73*	611143	12266	"BIGDB	58	27	1	0	78	24	32	60
3.	51*	98828	12259	"BIGDB	43	44	2	0	100	22	22	23
4.	51*	620144	12267	"BIGDB	43	44	2	0	84	24	22	23
5.	32	1074175	14463	"BIGDB	53	32	2	0	100	37	10	18
6.	30	1074437	14464	"BIGDB	47	40	2	0	100	40	10	16
7.	29	1074551	14465	"BIGDB	46	37	2	0	100	40	10	15



Retention time = 28.97

Area = 2809836. Tentative Concentration is 530.00

1. Decane (8CI9CI)	142	C10H22
2. Decane, 2,9-dimethyl- (8CI9CI)	170	C12H26
3. Octane, 3,5-dimethyl- (8CI9CI)	142	C10H22
4. Undecane, 2-methyl- (8CI9CI)	170	C12H26
5. Decane, 3,8-dimethyl- (8CI9CI)	170	C12H26
6. Decane, 2,5,6-trimethyl- (9CI)	184	C13H28
7. Nonane (8CI9CI)	128	C9H20

Sample file: >EF527 Spectrum #: 710
Search speed: 2 Tilting option: S No. of ion ranges searched: 55

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	79*	124185	16061	"BIGDB	71	29	1	2	88	11	43	60
2.	67	1002171	6094	"BIGDB	59	33	1	0	97	15	34	26
3.	64*	15869939	3611	"BIGDB	54	39	1	0	93	22	28	40
4.	60	7045718	6095	"BIGDB	50	44	2	0	90	15	30	14
5.	60	17312559	11149	"BIGDB	47	45	2	0	69	11	30	14
6.	59	62108230	6005	"BIGDB	59	42	0	0	78	25	27	32
7.	58	111842	6110	"BIGDB	61	35	2	0	108	16	25	21

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FTAB4S2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2152

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF528

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 14. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	12.	U
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenzene	6.	U
100-41-4	Ethylbenz ne	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

FTAB4S2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2152

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF528

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 14. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	22.70	20.	J
2.				
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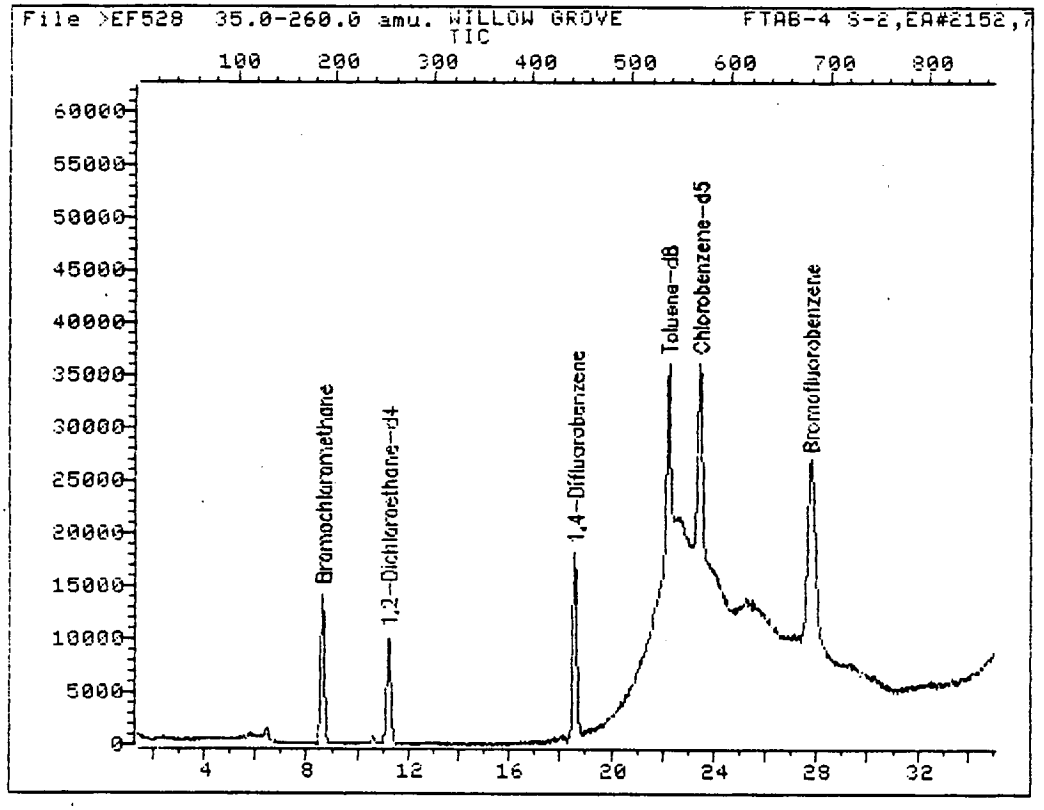
TOTAL ION CHROMATOGRAM



Data File: >EF528::D2 Quant Output File: ^EF528::QT
Name: WILLOW GROVE
Misc: FTAB-4 S-2,EA#2152,7002E5,SOIL,5.0GM

Id File: EVOAS::8D
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 21:01
Injected at: 890509 20:25

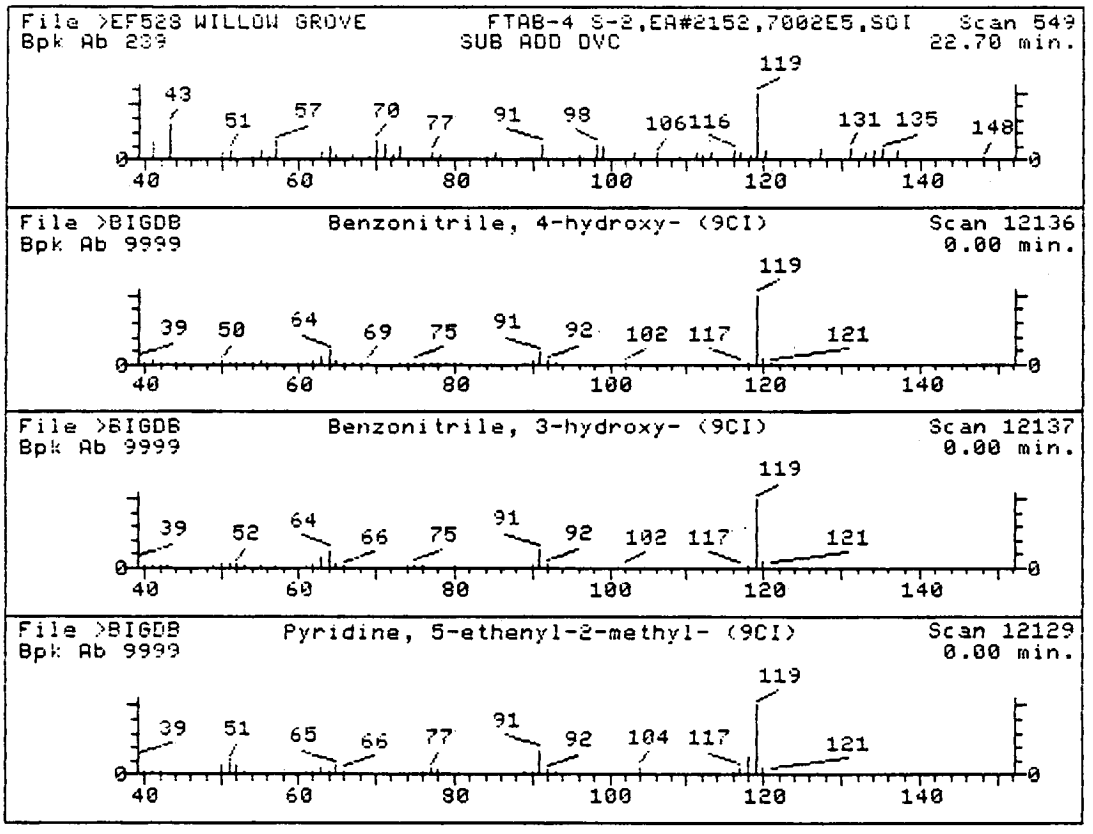
QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890509 21:01
Output File: ^EF528::QT Injected at: 890509 20:25
Data File: >EF528::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: FTAB-4 S-2,EA#2152,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.66	128.0	19455	50.00	UG/KG	88
13)	1,2-Dichloroethane-d4	11.21	65.0	40815	50.31	UG/KG	83
15)	*1,4-Difluorobenzene	18.58	114.0	68860	50.00	UG/KG	92
29)	*Chlorobenzene-d5	23.44	117.0	62074	50.00	UG/KG	95
35)	Toluene-d8	22.23	98.0	68428	51.62	UG/KG	99
40)	Bromofluorobenzene	27.75	95.0	63676	49.74	UG/KG	89

* Compound is ISTD



Retention time = 22.70 UNKNOWN

Area = 185536.0 Tentative Concentration is 18.00

1.	Benzonitrile, 4-hydroxy- (9CI)	119	C7H5NO
2.	Benzonitrile, 3-hydroxy- (9CI)	119	C7H5NO
3.	Pyridine, 5-ethenyl-2-methyl- (9CI)	119	C8H9N
4.	[1,2,4]Triazolo[1,5-a]pyridine (9CI)	119	C6H5N3
5.	Aziridine, 1-phenyl- (8CI9CI)	119	C8H9N

Sample file: >EF528 Spectrum #: 549
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	20*	767000	12136	"BIGDB	35	57	1	0	80	52	5	19
2.	20*	873621	12137	"BIGDB	34	58	2	0	83	52	5	16
3.	15*	140761	12129	"BIGDB	41	64	2	0	67	60	3	14
4.	15*	274851	12133	"BIGDB	26	70	2	0	95	57	3	14
5.	15*	696184	12135	"BIGDB	24	68	3	0	249	57	3	12

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1S3 DL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2154

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF531

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 16. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	59.	U
74-83-9	Bromomethane	59.	U
75-01-4	Vinyl Chloride	59.	U
75-00-3	Chloroethane	59.	U
75-09-2	Methylene Chloride	30.	U
67-64-1	Acetone	150.	
75-15-0	Carbon Disulfide	30.	U
75-35-4	1,1-Dichloroethene	30.	U
75-34-3	1,1-Dichloroethane	30.	U
540-59-0	1,2-Dichloroethene (total)	30.	U
67-66-3	Chloroform	30.	U
107-06-2	1,2-Dichloroethane	30.	U
78-93-3	2-Butanone	59.	U
71-55-6	1,1,1-Trichloroethane	30.	U
56-23-5	Carbon Tetrachloride	30.	U
108-05-4	Vinyl Acetate	59.	U
75-27-4	Bromodichloromethane	30.	U
78-87-5	1,2-Dichloropropane	30.	U
10061-01-5	cis-1,3-Dichloropropene	30.	U
79-01-6	Trichloroethene	30.	U
124-48-1	Dibromochloromethane	30.	U
79-00-5	1,1,2-Trichloroethane	30.	U
71-43-2	Benzene	52.	
10061-02-6	trans-1,3-Dichloropropene	30.	U
75-25-2	Bromoform	30.	U
108-10-1	4-Methyl-2-Pentanone	59.	U
591-78-6	2-Hexanone	59.	U
127-18-4	Tetrachloroethene	30.	U
79-34-5	1,1,2,2-Tetrachloroethane	30.	U
108-88-3	Toluene	30.	U
108-90-7	Chlorobenzene	30.	U
100-41-4	Ethylbenz ne	3700.	E
100-42-5	Styrene	30.	U
1330-20-7	Xyl ne (total)	5100.	E

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1S3 DL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA#2154

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF531

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 16. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 5.00

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	4806-61-5	Cyclobutane, ethyl- (8CI9CI)	13.66	50.	J
2.	- -	UNKNOWN	15.60	40.	J
3.	96-14-0	Pentane, 3-methyl- (8CI9CI)	17.50	100.	J
4.	- -	UNKNOWN	18.20	200.	J
5.	565-59-3	Pentane, 2,3-dimethyl- (8CI9	19.32	100.	J
6.	617-78-7	Pentane, 3-ethyl- (8CI9CI)	19.67	90.	J
7.	589-34-4	Hexane, 3-methyl- (8CI9CI)	20.56	1000.	J
8.	591-76-4	Hexane, 2-methyl- (8CI9CI)	21.03	300.	J
9.	62108-23-0	Decane, 2,5,6-trimethyl- (9C	21.81	100.	J
10.	142-82-5	Heptane (DOT)(8CI9CI)	22.35	600.	J
11.	13475-82-6	Heptane, 2,2,4,6,6-pentameth	22.89	70.	J
12.	584-94-1	Hexane, 2,3-dimethyl- (8CI9C	23.86	80.	J
13.	619-99-8	Hexane, 3-ethyl- (8CI9CI)	24.29	200.	J
14.	584-94-1	Hexane, 2,3-dimethyl- (8CI9C	24.99	300.	J
15.	6236-88-0	Cyclohexane, 1-ethyl-4-methy	26.43	50.	J
16.	111-65-9	Octane (DOT)(8CI9CI)	27.32	1000.	J
17.	- -	UNKNOWN	28.37	200.	J
18.	- -	UNKNOWN	31.71	500.	J
19.	1072-05-5	Heptane, 2,6-dimethyl- (8CI9	33.38	300.	J
20.					
21.					
22.					
23.					
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25.					
26.					
27.					
28.					
29.					
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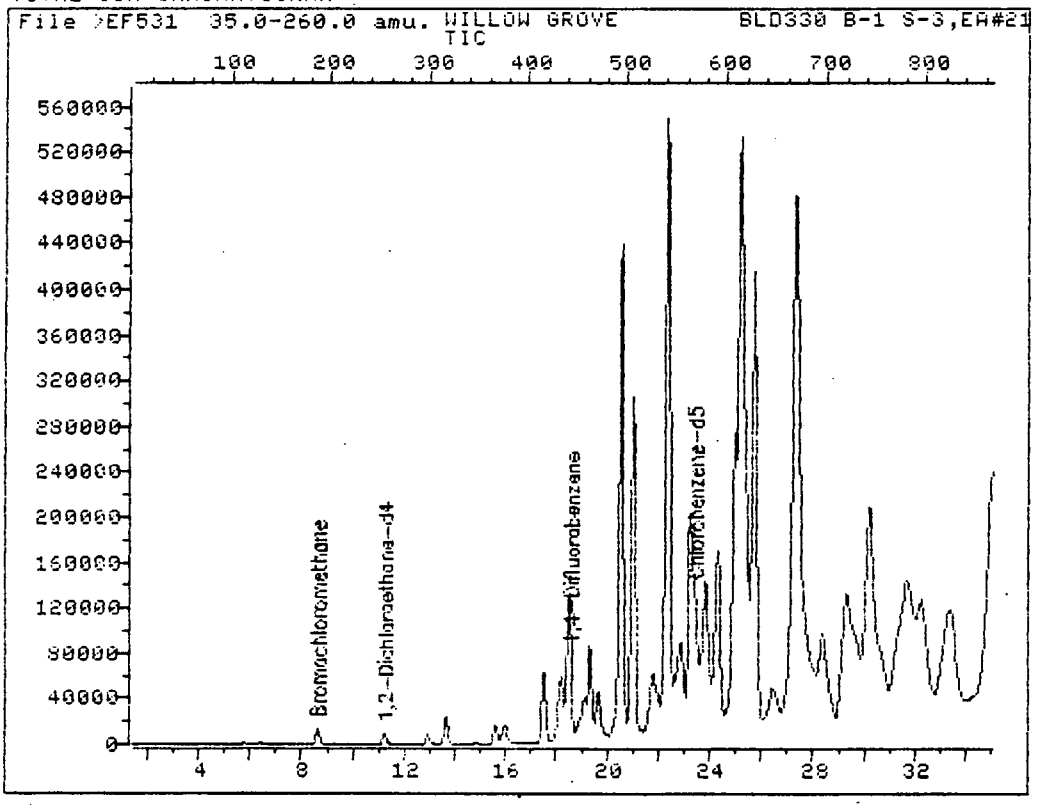
TOTAL ION CHROMATOGRAM



Data File: >EF531::D2 Quant Output File: ^EF531::QT
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL,1.0GM (1/5 DIL)

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 23:04
Injected at: 890509 22:26

QUANT REPORT

Operator ID: CARL
Output File: ^EF531::QT
Data File: >EF531::D2
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL,1.0GM (1/5 DIL)

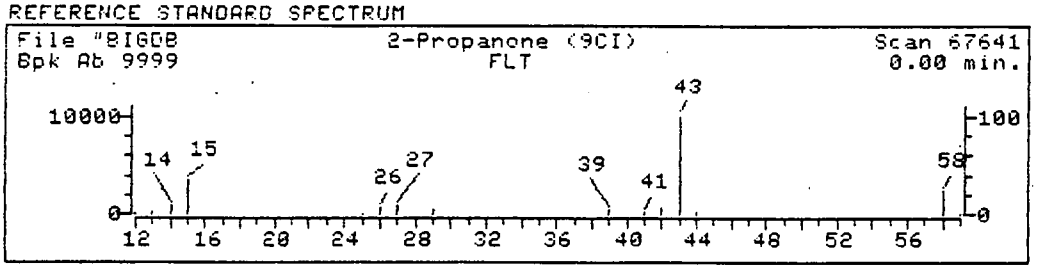
Quant Rev: 6
Quant Time: 890509 23:04
Injected at: 890509 22:26
Dilution Factor: 1.00000

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

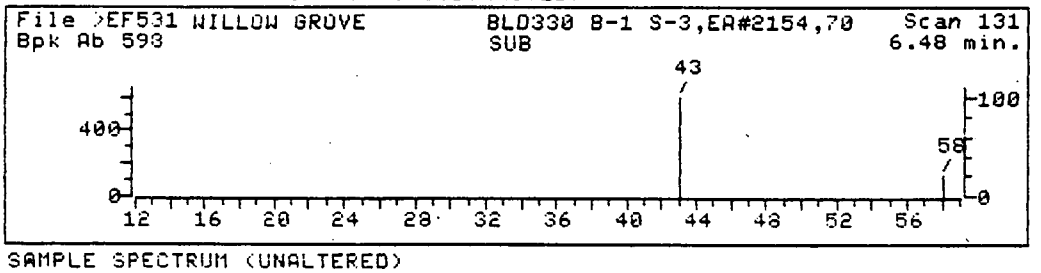
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	19074	50.00	UG/KG	83
7)	Acetone	6.48	43.0	6140	25.25	UG/KG	92
13)	1,2-Dichloroethane-d4	11.25	65.0	39224	49.31	UG/KG	83
15)	*1,4-Difluorobenzene	18.58	114.0	68672	50.00	UG/KG	91
26)	Benzene	16.06	78.0	8373	8.73	UG/KG	81
29)	*Chlorobenzene-d5	23.44	117.0	61213	50.00	UG/KG	95
35)	Toluene-d8	22.23	98.0	56709M	43.38	UG/KG	
37)	Ethylbenzene	25.42	106.0	288594	617.73	UG/KG	97
39)	Xylene (total)	30.20	106.0	559330M	852.24	UG/KG	95
40)	Bromofluorobenzene	27.75	95.0	62860M	49.80	UG/KG	

* Compound is ISTD

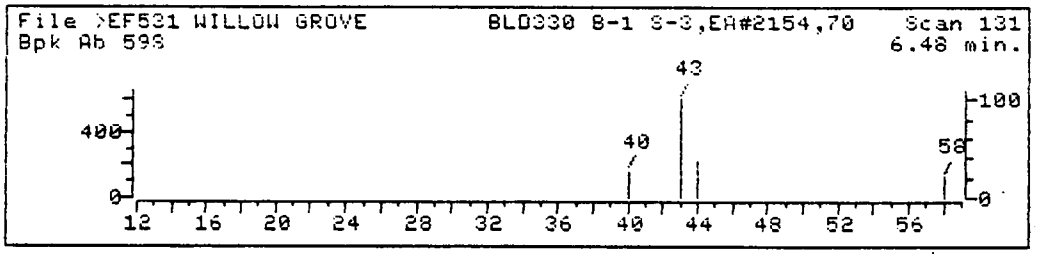
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



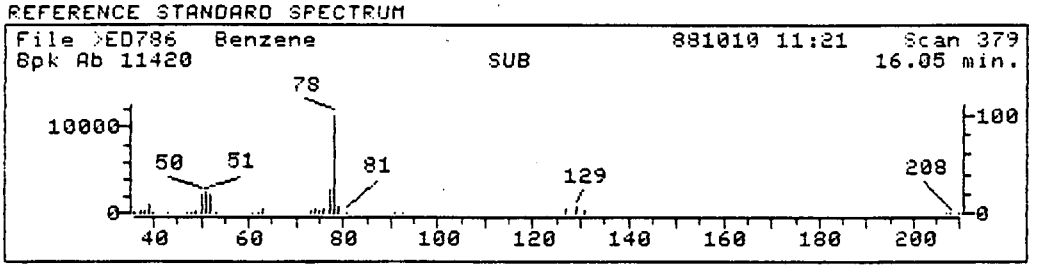
SAMPLE SPECTRUM (UNALTERED)



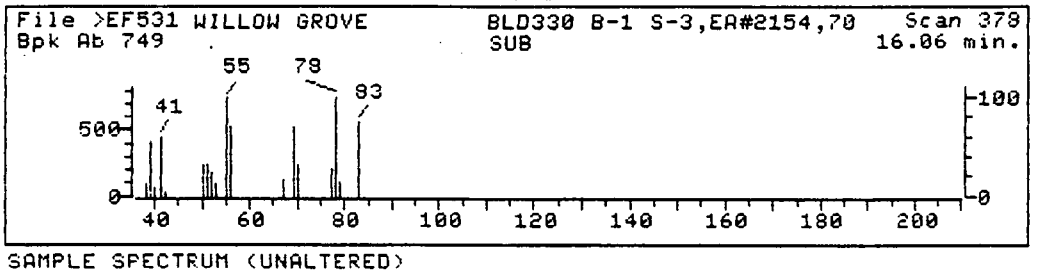
Data File: >EF531::D2 Quant Output File: ^EF531::QT
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 23:04 Quant ID File: EVOAS::BD
Injected at: 890509 22:26 Last Calibration: 890509 13:58

Compound No: 7
Compound Name: Acetone
Scan Number: 131
Retention Time: 6.48 min.
Quant Ion: 43.0
Area: 6140
Concentration: 25.25 UG/KG
q-value: 92

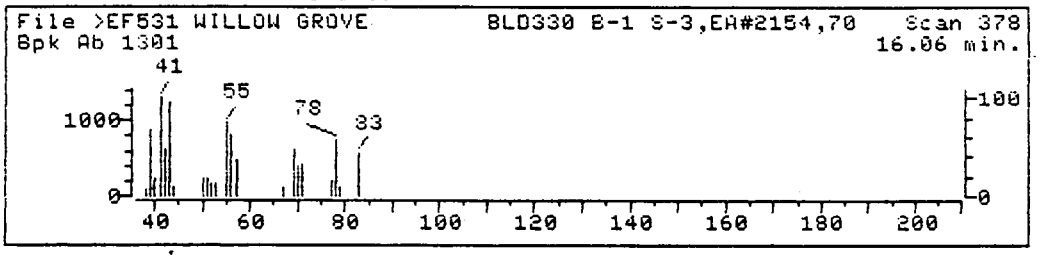
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



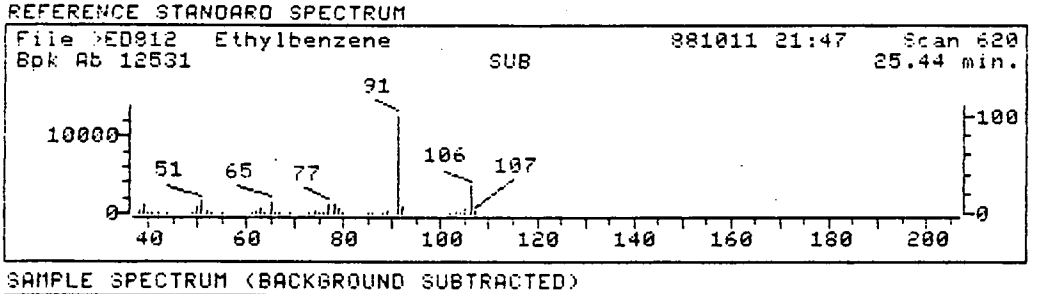
SAMPLE SPECTRUM (UNALTERED)



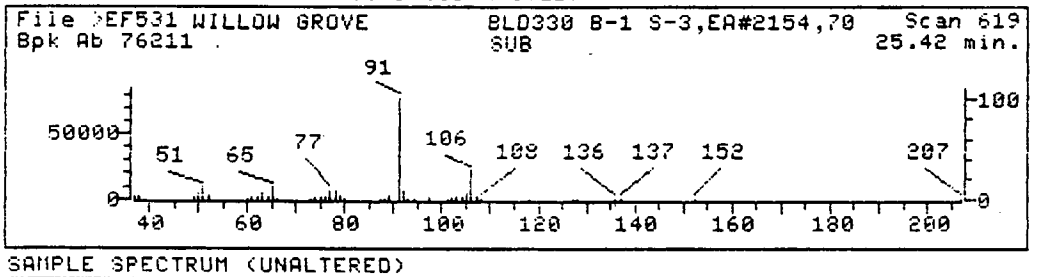
Data File: >EF531::D2 Quant Output File: ^EF531::QT
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 23:04 Quant ID File: EVOAS::BD
Injected at: 890509 22:26 Last Calibration: 890509 13:58

Compound No: 26
Compound Name: Benzene
Scan Number: 378
Retention Time: 16.06 min.
Quant Ion: 78.0
Area: 8373
Concentration: 8.73 UG/KG
q-value: 81

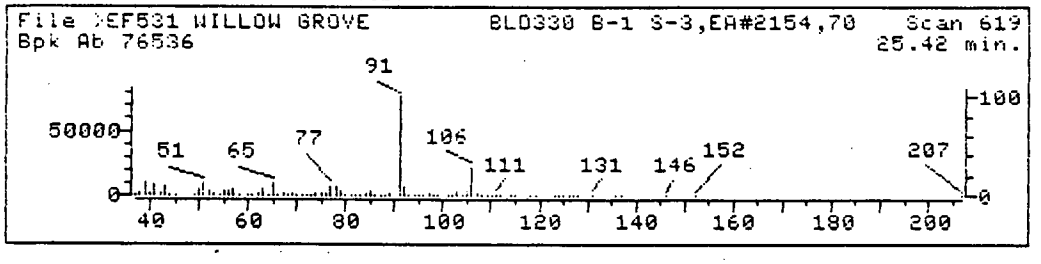
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



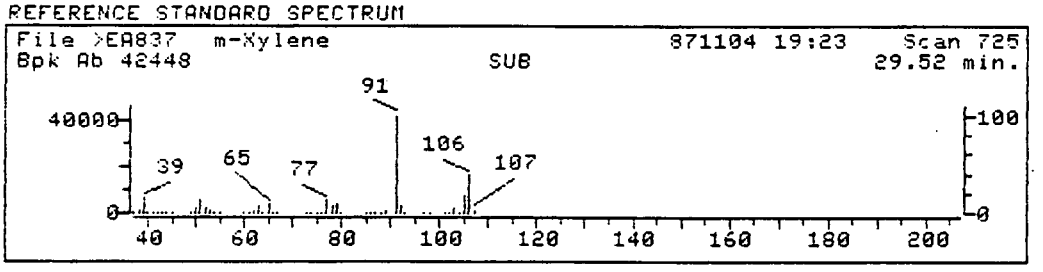
SAMPLE SPECTRUM (UNALTERED)



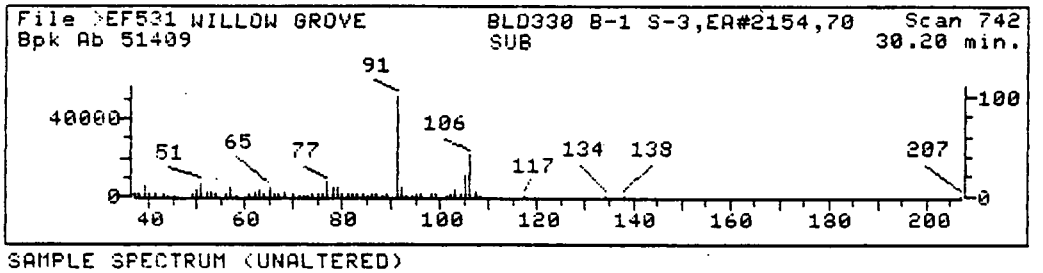
Data File: >EF531::D2 Quant Output File: ^EF531::QT
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 23:04 Quant ID File: EVOAS::BD
Injected at: 890509 22:26 Last Calibration: 890509 13:58

Compound No: 37
Compound Name: Ethylbenzene
Scan Number: 619
Retention Time: 25.42 min.
Quant Ion: 106.0
Area: 288594
Concentration: 617.73 UG/KG
q-value: 97

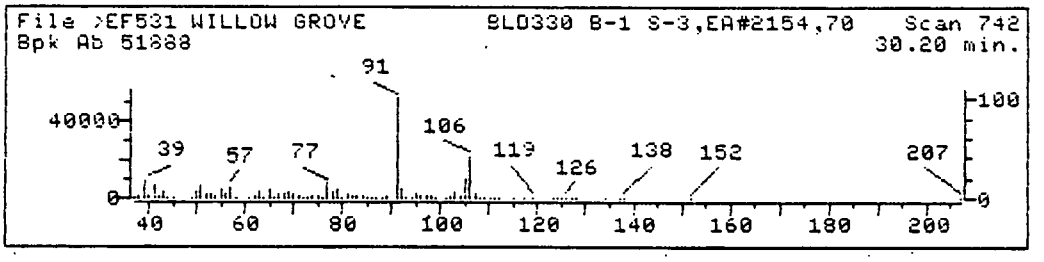
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

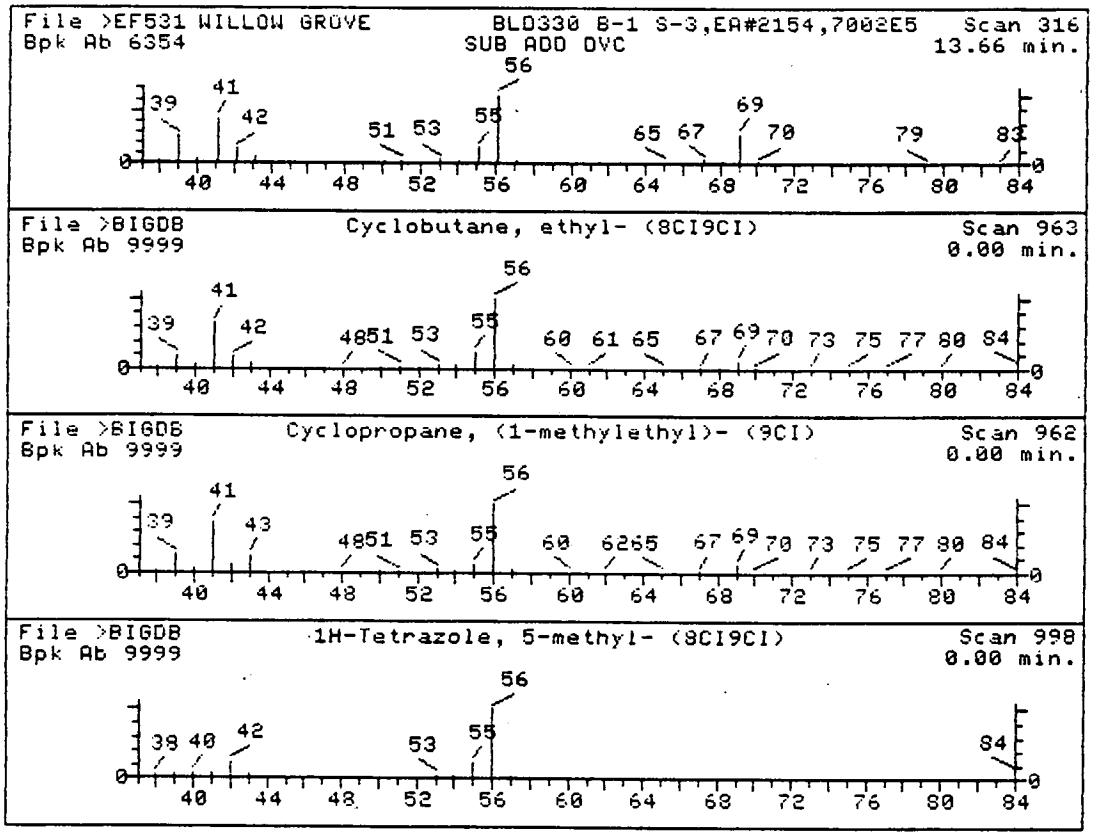


SAMPLE SPECTRUM (UNALTERED)



Data File: >EF531::D2 Quant Output File: ^EF531::QT
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL,1.0GM (1/5 DIL)
Quant Time: 890509 23:04 Quant ID File: EVOAS::BD
Injected at: 890509 22:26 Last Calibration: 890509 13:58

Compound No: 39
Compound Name: Xylene (total)
Scan Number: 742
Retention Time: 30.20 min.
Quant Ion: 106.0
Area: 488848
Concentration: 852.24 UG/KG
q-value: 95



Retention time = 13.66

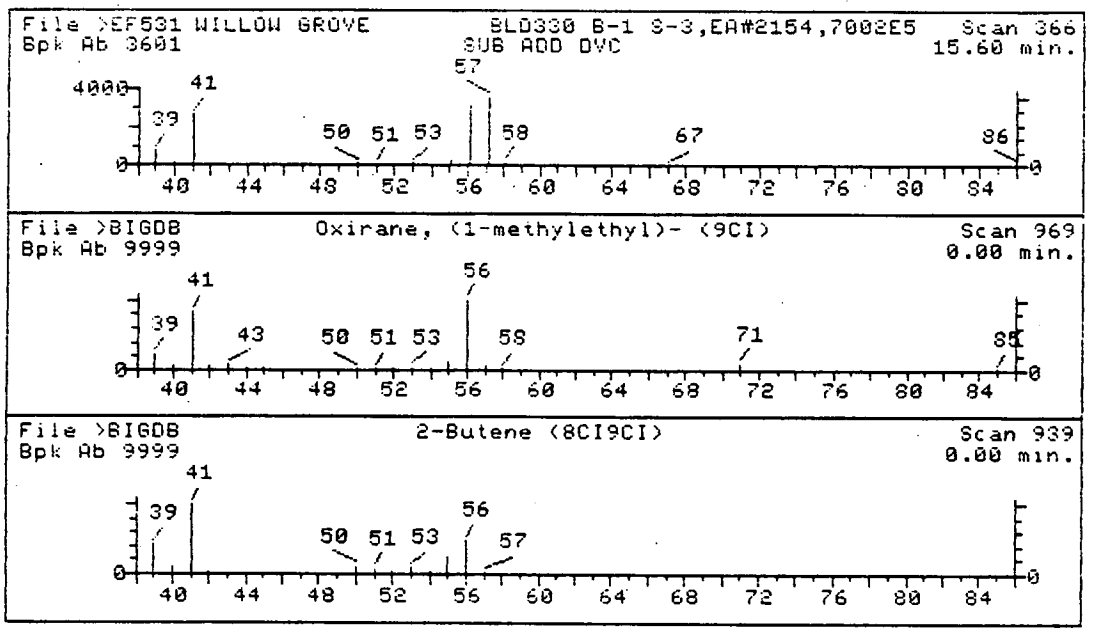
Area = 268620.0 Tentative Concentration is 9.00

1.	Cyclobutane, ethyl- (8CI9CI)	84	C6H12
2.	Cyclopropane, (1-methylethyl)- (9CI)	84	C6H12
3.	1H-Tetrazole, 5-methyl- (8CI9CI)	84	C2H4N4
4.	Cyclopentane, methyl- (8CI9CI)	84	C6H12
5.	1-Propene, 2-methyl- (9CI)	56	C4H8
6.	Cyclopropane, propyl- (9CI)	84	C6H12
7.	Oxetane, 3,3-dimethyl- (9CI)	86	C5H10O

Sample file: >EF531 Spectrum #: 316
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	59*	4806615	963	"BIGDB	45	38	0	0	100	38	21	57
2.	53*	3638355	962	"BIGDB	38	45	0	0	90	40	19	44

3.	44*	4076362	998	"BIGDB	47	37	2	0	95	32	16	27
4.	31	96377	986	"BIGDB	51	36	2	0	77	38	10	17
5.	31*	115117	940	"BIGDB	37	36	1	0	84	43	8	19
6.	27*	2415727	997	"BIGDB	28	60	3	0	76	38	10	13
7.	25	6921353	952	"BIGDB	26	48	0	0	82	42	8	13



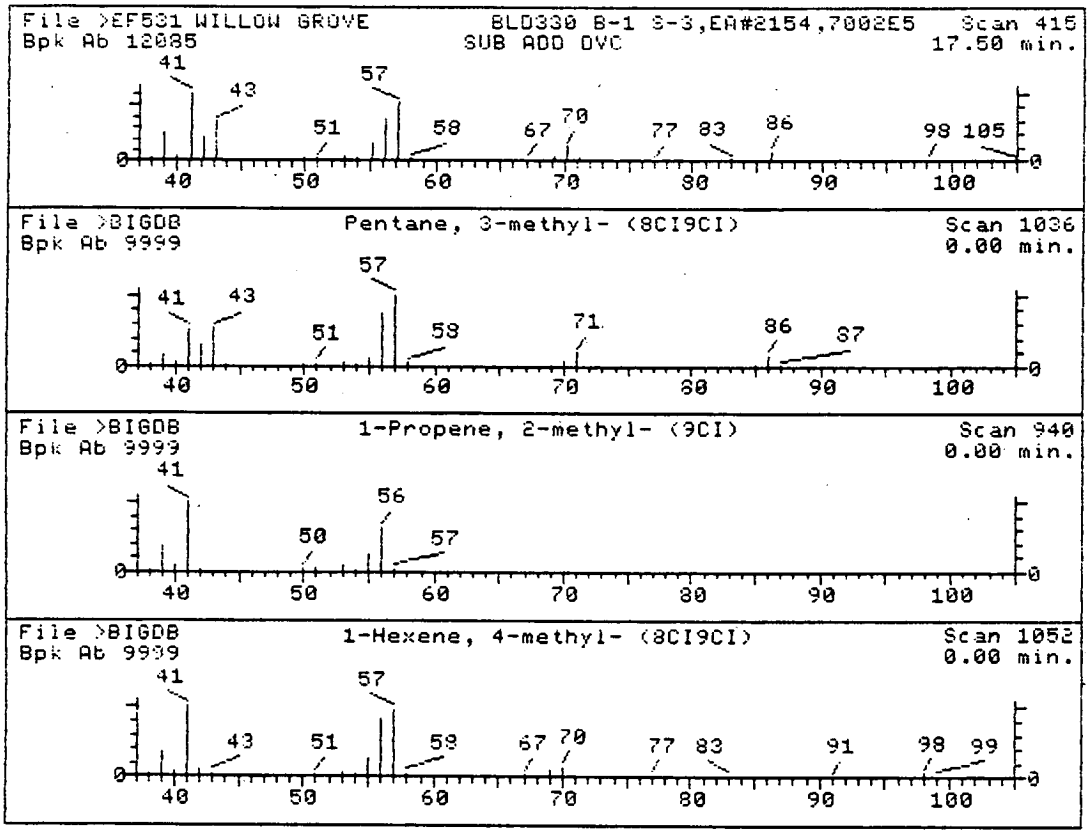
Retention time = 15.60 UNKNOWN

Area = 203715.0 Tentative Concentration is 7.00

1. Oxirane, (1-methylethyl)- (9CI) 86 C5H10O
2. 2-Butene (8CI9CI) 56 C4H8

Sample file: >EF531 Spectrum #: 366
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	30*	1438148	969	"BIGDB	22	54	2	0	86	32	12	13
2.	15*	107017	939	"BIGDB	21	60	2	0	52	58	3	13



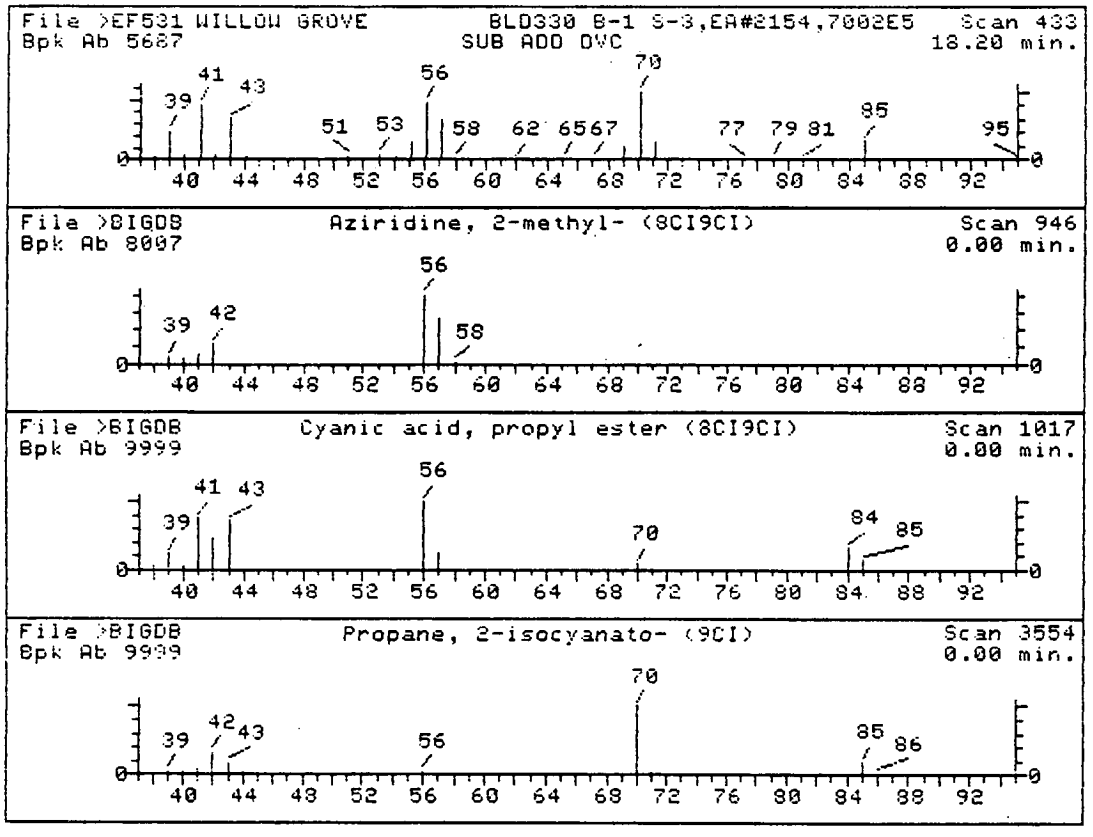
Retention time = 17.50

Area = 738726.0 Tentative Concentration is 25.00

1.	Pentane, 3-methyl- (8CI9CI)	86	C6H14
2.	1-Propene, 2-methyl- (9CI)	56	C4H8
3.	1-Hexene, 4-methyl- (8CI9CI)	98	C7H14
4.	Hexane, 2,2,3-trimethyl- (8CI9CI)	128	C9H20
5.	Pentane, 3-ethyl-2,2-dimethyl- (8CI9CI)	128	C9H20
6.	Heptane, 2-bromo- (8CI9CI)	178	C7H15Br
7.	1-Pentene, 4,4-dimethyl- (8CI9CI)	98	C7H14

Sample file: >EF531 Spectrum #: 415
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	49*	96140	1036	"BIGDB	47	46	2	0	82	28	19	27
2.	37*	115117	940	"BIGDB	53	20	0	0	76	60	12	77
3.	28	3769231	1052	"BIGDB	44	49	1	0	71	37	10	14
4.	24	16747254	970	"BIGDB	34	46	1	0	65	41	8	12
5.	24	16747323	971	"BIGDB	33	46	1	0	67	41	8	12
6.	20	1974045	1201	"BIGDB	39	45	1	0	85	51	5	14
7.	20*	762629	1183	"BIGDB	25	51	1	0	81	52	5	14



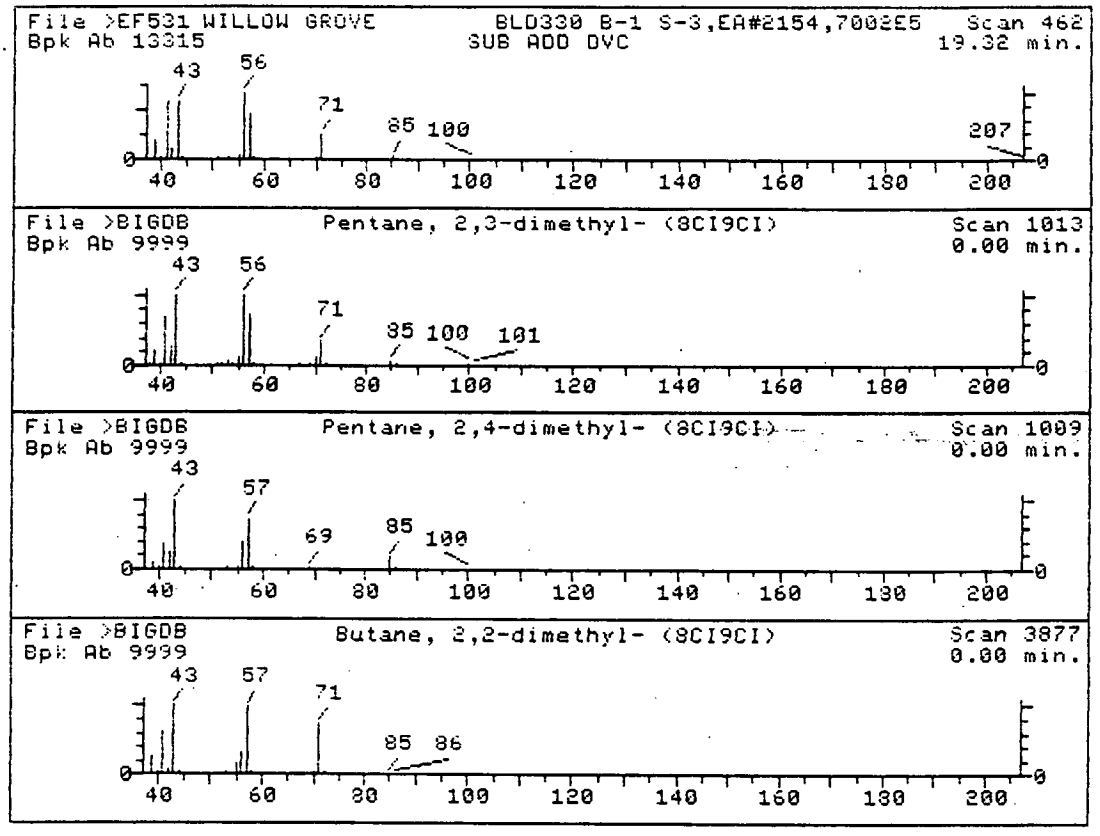
Retention time = 18.20 UNKNOWN

Area = 897921.0 Tentative Concentration is 31.00

1. Aziridine, 2-methyl- (8CI9CI) 57 C3H7N
2. Cyanic acid, propyl ester (8CI9CI) 85 C4H7NO
3. Propane, 2-isocyanato- (9CI) 85 C4H7NO

Sample file: >EF531 Spectrum #: 433
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	20*	75558	946	"BIGDB	21	46	1	0	84	55	5	14
2.	20*	1768361	1017	"BIGDB	20	85	2	0	84	53	5	13
3.	15*	1795488	3554	"BIGDB	28	48	2	0	100	59	3	14



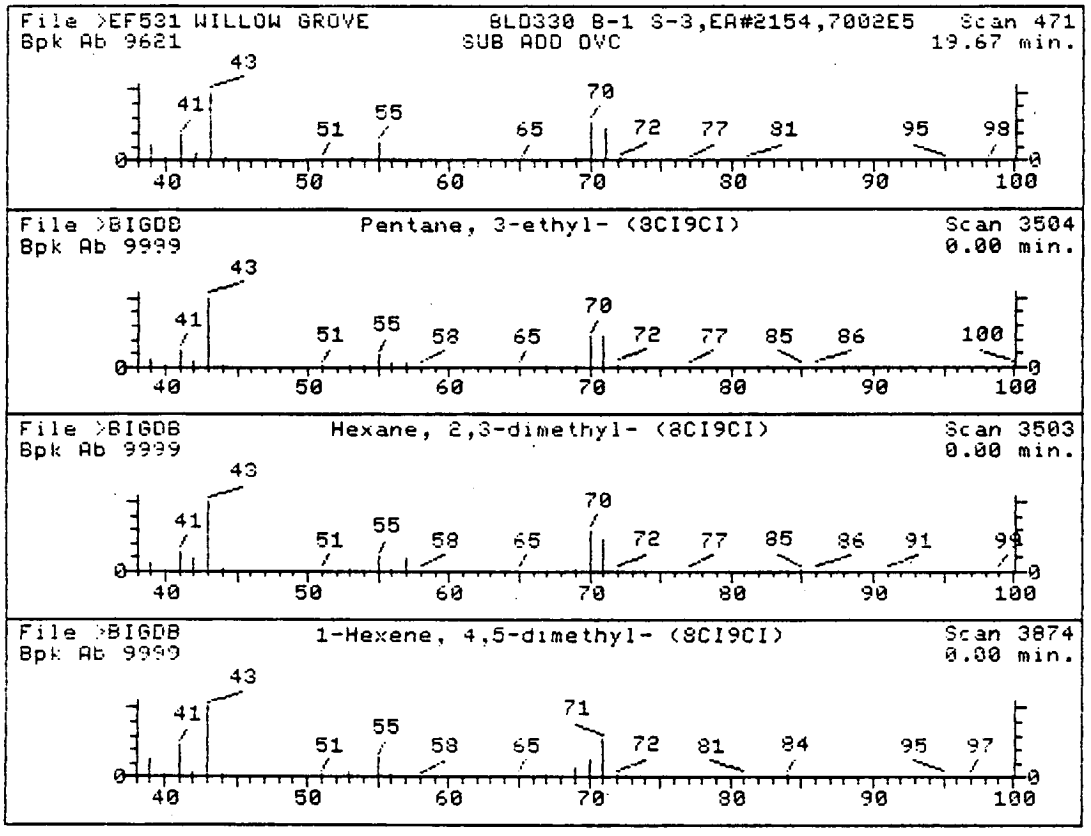
Retention time = 19.32

Area = 712876.0 Tentative Concentration is 24.00

1. Pentane, 2,3-dimethyl- (8CI9CI)	100	C7H16
2. Pentane, 2,4-dimethyl- (8CI9CI)	100	C7H16
3. Butane, 2,2-dimethyl- (8CI9CI)	86	C6H14
4. Oxirane, (1-methylethyl)- (9CI)	86	C5H10O
5. Propane, 2-methyl- (8CI9CI)	58	C4H10

Sample file: >EF531 Spectrum #: 462
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	87*	565593	1013	"BIGDB	61	34	2	0	87	4	63	44
2.	28*	108087	1009	"BIGDB	25	59	2	0	73	38	10	14
3.	20	75832	3877	"BIGDB	35	57	0	0	51	53	5	18
4.	20*	1438148	969	"BIGDB	26	50	2	0	100	55	5	14
5.	11*	75285	248	"BIGDB	22	47	1	0	81	62	2	14



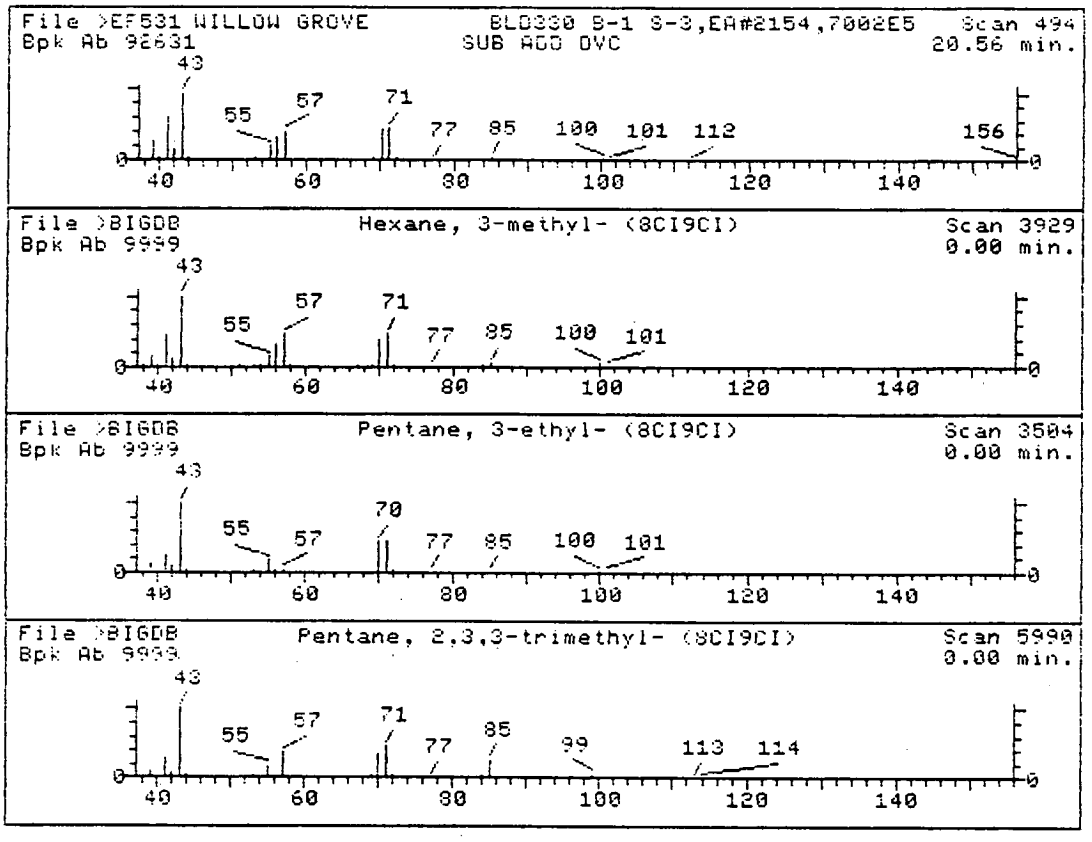
Retention time = 19.67

Area = 443402.0 Tentative Concentration is 15.00

1.	Pentane, 3-ethyl- (8CI9CI)	100	C7H16
2.	Hexane, 2,3-dimethyl- (8CI9CI)	114	C8H18
3.	1-Hexene, 4,5-dimethyl- (8CI9CI)	112	C8H16
4.	1-Pentene, 3,4-dimethyl- (8CI9CI)	98	C7H14
5.	Ethene, 1,1'-oxybis- (9CI)	70	C4H6O
6.	Cyanic acid, ethyl ester (8CI9CI)	71	C3H5NO

Sample file: >EF531 Spectrum #: 471
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	83*	617787	3504	"BIGDB	46	37	2	0	100	4	57	26
2.	70	584941	3503	"BIGDB	50	37	3	0	98	10	42	14
3.	42	16106595	3874	"BIGDB	40	47	2	0	80	21	17	13
4.	41*	7385786	3540	"BIGDB	24	80	3	0	96	25	17	12
5.	29*	109933	3467	"BIGDB	22	63	3	0	94	34	12	12
6.	11*	627485	3867	"BIGDB	23	51	1	0	107	64	2	14



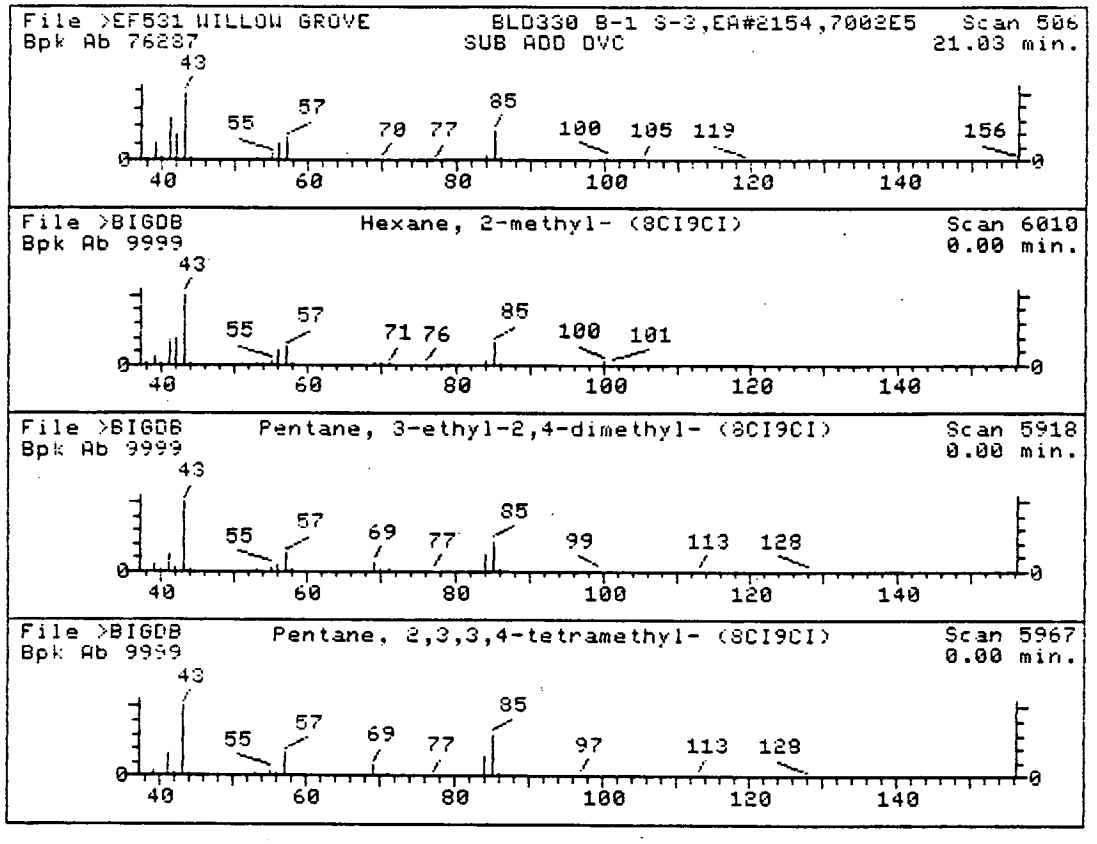
Retention time = 20.56

Area = 4984190. Tentative Concentration is 170.00

1. Hexane, 3-methyl- (8CI9CI)	100	C7H16
2. Pentane, 3-ethyl- (8CI9CI)	100	C7H16
3. Pentane, 2,3,3-trimethyl- (8CI9CI)	114	C8H18
4. Heptane, 4-methyl- (8CI9CI)	114	C8H18
5. Hexane, 2,3-dimethyl- (8CI9CI)	114	C8H18
6. Butane, 2,2-dimethyl- (8CI9CI)	86	C6H14
7. Pentane, 2,3-dimethyl- (8CI9CI)	100	C7H16

Sample file: >EF531 Spectrum #: 494
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	89*	589344	3929	"BIGDB	57	36	0	0	96	3	66	69
2.	67*	617787	3504	"BIGDB	42	41	0	0	100	27	27	54
3.	60	560214	5990	"BIGDB	41	47	2	0	100	14	30	13
4.	43	589537	3550	"BIGDB	44	43	2	0	94	25	17	14
5.	38	584941	3503	"BIGDB	44	43	1	0	80	26	14	15
6.	25	75832	3877	"BIGDB	26	51	0	0	46	43	8	13
7.	20*	565593	1013	"BIGDB	34	61	1	0	63	52	5	18



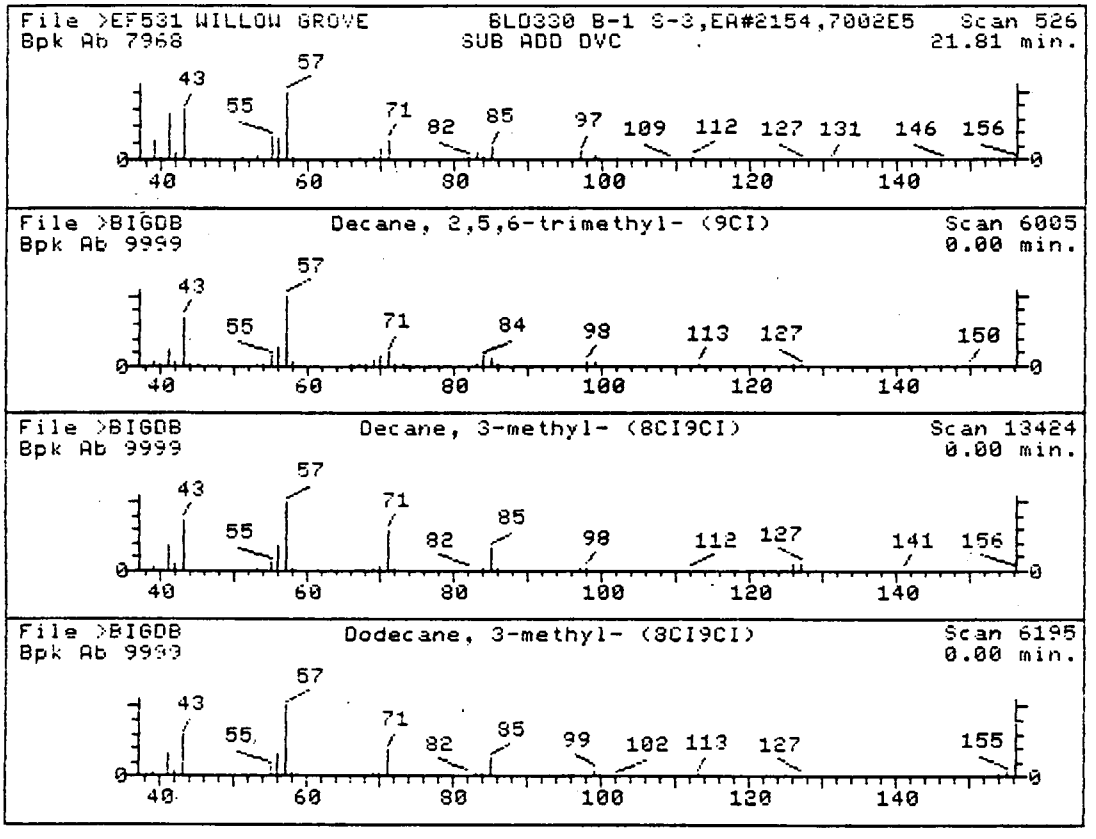
Retention time = 21.03

Area = 3269798. Tentative Concentration is 55.00

1.	Hexane, 2-methyl- (8CI9CI)	100	C7H16
2.	Pentane, 3-ethyl-2,4-dimethyl- (8CI9CI)	128	C9H20
3.	Pentane, 2,3,3,4-tetramethyl- (8CI9CI)	128	C9H20
4.	Pentane, 3-ethyl-3-methyl- (8CI9CI)	114	C8H18
5.	Ethanone, 1-(3-ethyloxiranyl)- (9CI)	114	C6H10O2
6.	Furan, tetrahydro-2,5-dimethyl- (8CI9CI)	100	C6H12O
7.	1-Pentene, 4-methyl- (8CI9CI)	84	C6H12

Sample file: >EF531 Spectrum #: 506
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	95*	591764	6010	"BIGDB	74	12	0	0	97	5	72	95
2.	43	1068877	5918	"BIGDB	42	41	2	0	100	24	17	14
3.	39	16747389	5967	"BIGDB	47	35	2	0	75	30	14	16
4.	36	1067089	5955	"BIGDB	38	44	2	0	69	27	14	13
5.	35	17257817	5933	"BIGDB	36	38	2	0	100	28	14	12
6.	27*	1003389	6012	"BIGDB	26	74	3	0	61	38	10	13
7.	24*	691372	994	"BIGDB	41	44	1	0	58	53	7	23



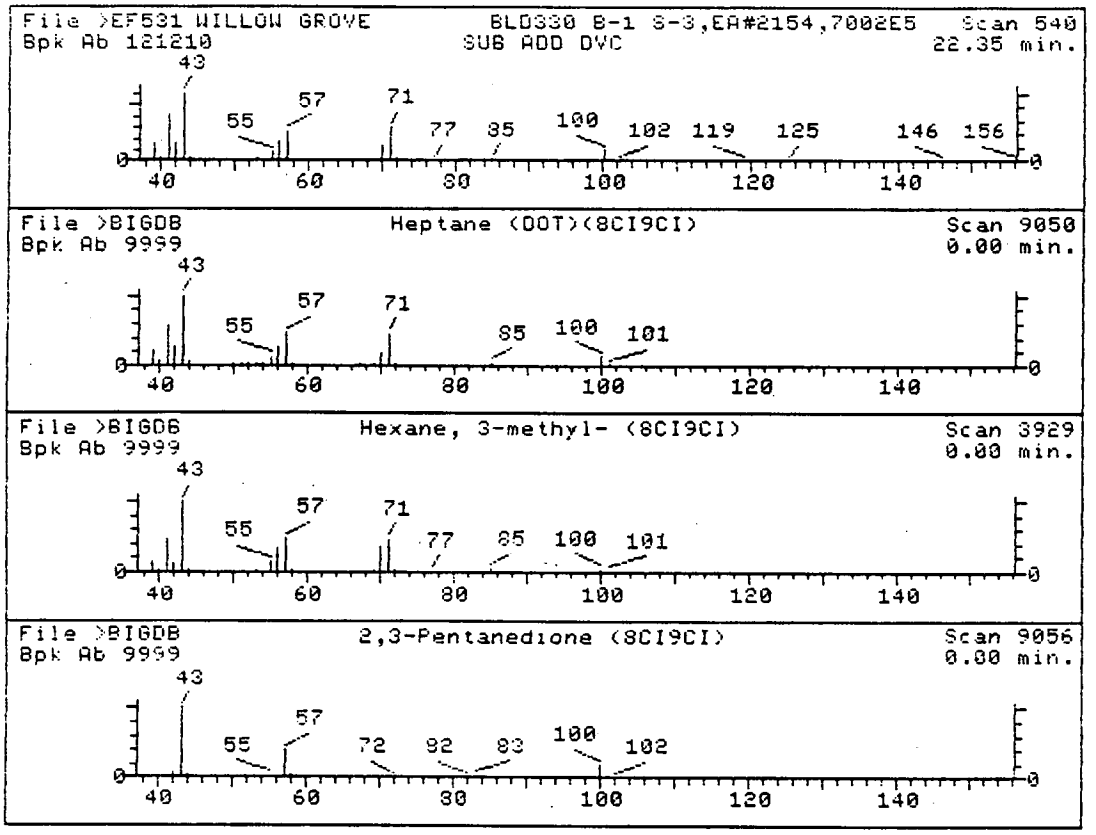
Retention time = 21.81

Area = 1077403. Tentative Concentration is 18.00

1. Decane, 2,5,6-trimethyl- (9CI)	184	C13H28
2. Decane, 3-methyl- (8CI9CI)	156	C11H24
3. Dodecane, 3-methyl- (8CI9CI)	184	C13H28
4. Octane, 2,5,6-trimethyl- (9CI)	156	C11H24
5. Octane, 2,4,6-trimethyl- (9CI)	156	C11H24
6. Heptane, 2,2,3,4,6,6-hexamethyl- (9CI)	184	C13H28
7. Isooctane, (ethenyloxy)- (9CI)	156	C10H20O

Sample file: >EF531 Spectrum #: 526
Search speed: 2 Tilting option: S No. of ion ranges searched: 61

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	70	62108230	6005	"BIGDB	60	41	2	0	100	10	42	17
2.	60*	13151343	13424	"BIGDB	22	72	3	0	99	15	30	12
3.	60	17312571	6195	"BIGDB	61	38	2	0	79	12	30	19
4.	52*	62016142	6003	"BIGDB	34	53	2	0	100	16	20	17
5.	45	62016379	6004	"BIGDB	48	37	2	0	81	21	17	16
6.	43	62108321	1029	"BIGDB	41	46	1	0	80	22	17	14
7.	43*	37769623	3941	"BIGDB	32	71	2	0	71	22	17	14



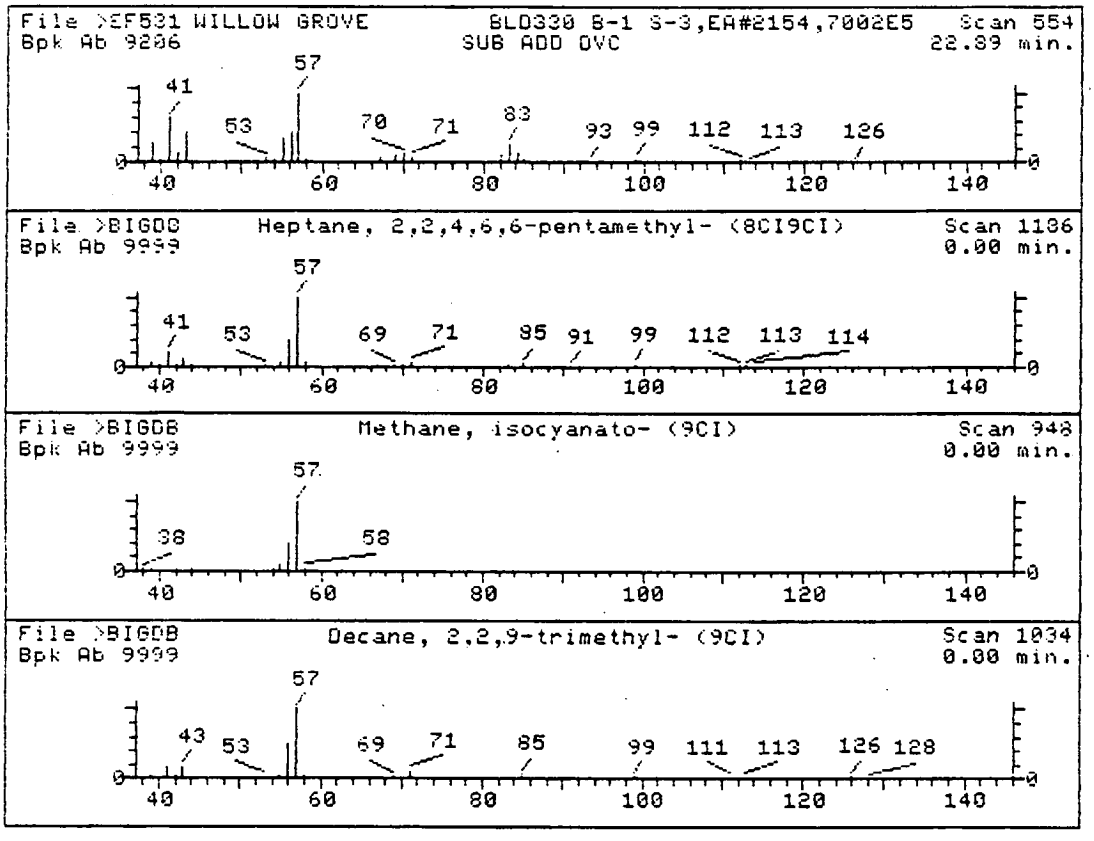
Retention time = 22.35

Area = 6053827. Tentative Concentration is 100.00

1. Heptane (DOT)(8CI9CI)	100	C7H16
2. Hexane, 3-methyl- (8CI9CI)	100	C7H16
3. 2,3-Pentanedione (8CI9CI)	100	C5H8O2
4. Pentane, 2,3-dimethyl- (8CI9CI)	100	C7H16
5. 3-Hexanone (8CI9CI)	100	C6H12O
6. p-Dioxin, 2,3-dihydro-5-methyl- (8CI)	100	C5H8O2
7. Pentane, 3-ethyl- (8CI9CI)	100	C7H16

Sample file: >EF531 Spectrum #: 540
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	93*	142825	9050	"BIGDB	72	25	0	0	94	3	68	89
2.	52*	589344	3929	"BIGDB	41	52	2	1	68	20	20	14
3.	30*	600146	9056	"BIGDB	33	53	1	0	87	42	8	18
4.	30*	565593	1013	"BIGDB	28	67	3	0	97	35	12	13
5.	25*	589388	9054	"BIGDB	28	45	0	0	46	50	7	19
6.	15*	3973226	9065	"BIGDB	20	54	1	0	98	59	3	14
7.	15*	617787	3504	"BIGDB	20	63	0	0	53	60	3	15



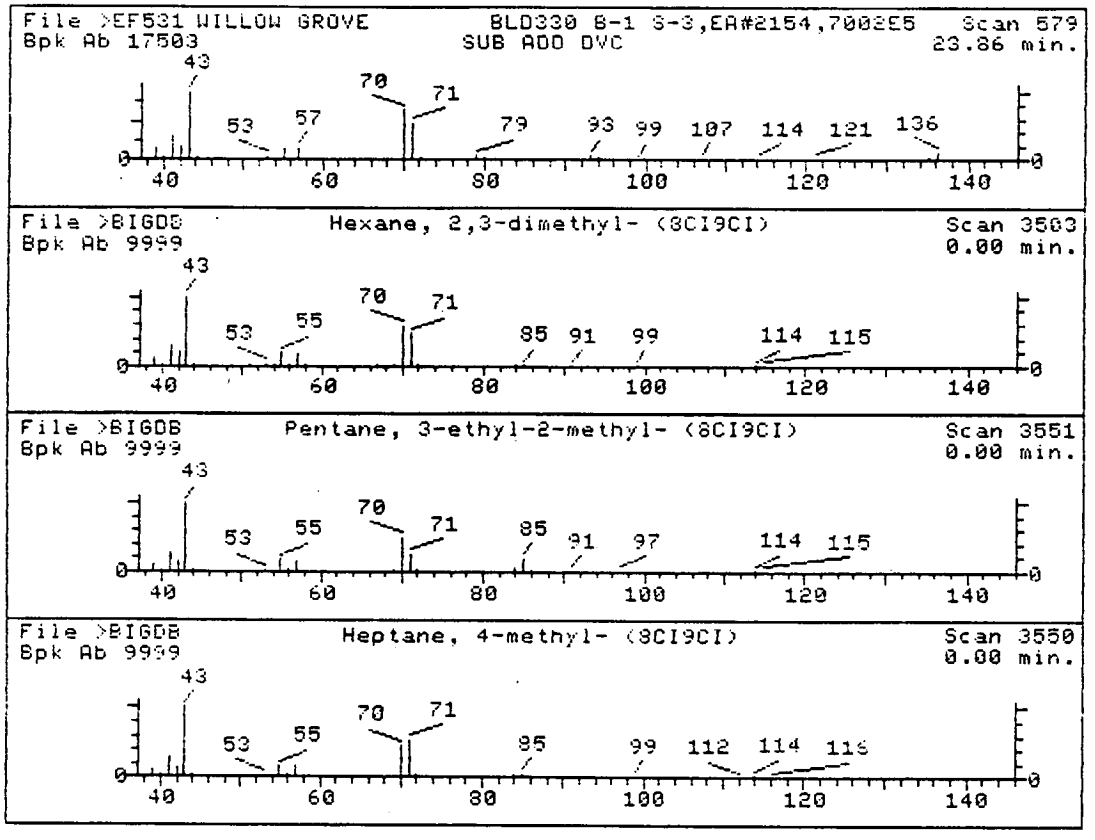
Retention time = 22.89

Area = 679137.0 Tentative Concentration is 11.00

1.	Heptane, 2,2,4,6,6-pentamethyl- (8CI9CI)	170	C12H26
2.	Methane, isocyanato- (9CI)	57	C2H3NO
3.	Decane, 2,2,9-trimethyl- (9CI)	184	C13H28
4.	Pentane, 2,2,4-trimethyl- (8CI9CI)	114	C8H18
5.	Undecane, 2,2-dimethyl- (8CI9CI)	184	C13H28
6.	Azetidine (8CI9CI)	57	C3H7N
7.	Heptane, 4-propyl- (8CI9CI)	142	C10H22

Sample file: >EF531 Spectrum #: 554
Search speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	43	13475826	1186	"BIGDB	39	36	1	0	97	25	17	14
2.	39*	624839	948	"BIGDB	30	34	0	0	75	33	16	22
3.	37	62238000	1034	"BIGDB	39	47	1	0	72	29	14	14
4.	37	540841	1198	"BIGDB	28	46	0	0	97	29	14	14
5.	36	17312640	1025	"BIGDB	35	50	1	0	81	27	14	13
6.	32*	503297	93	"BIGDB	27	60	1	0	113	33	12	15
7.	26	3178298	8738	"BIGDB	38	49	2	0	92	37	10	12



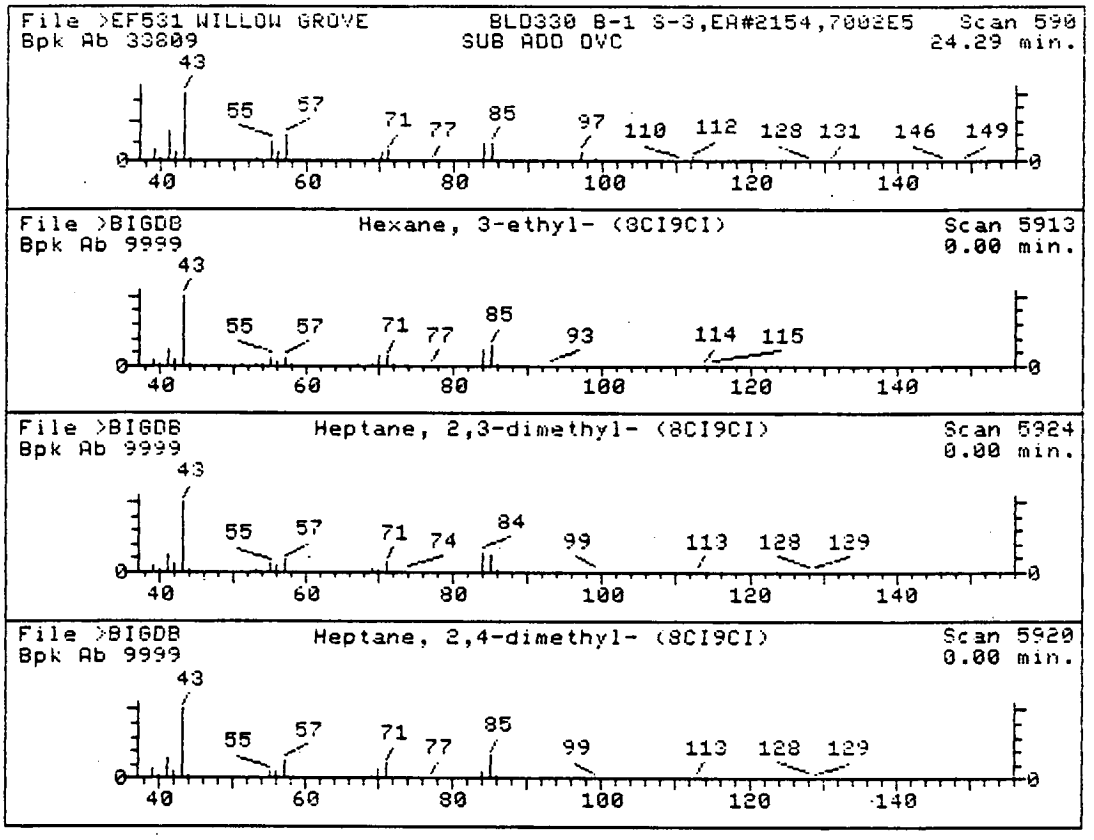
Retention time = 23.86

Area = 837429.0 Tentative Concentration is 14.00

1. Hexane, 2,3-dimethyl- (8CI9CI) 114 C8H18
2. Pentane, 3-ethyl-2-methyl- (8CI9CI) 114 C8H18
3. Heptane, 4-methyl- (8CI9CI) 114 C8H18
4. Ethene, 1,1'-oxybis- (9CI) 70 C4H6O
5. Pentane, 2,3,4-trimethyl- (8CI9CI) 114 C8H18

Sample file: >EF531 Spectrum #: 579
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	71*	584941	3503	"BIGDB	60	27	3	0	100	15	38	35
2.	37*	609267	3551	"BIGDB	38	53	3	0	100	28	14	14
3.	27	589537	3550	"BIGDB	41	46	2	0	100	40	10	13
4.	25*	109933	3467	"BIGDB	22	63	3	0	100	48	7	12
5.	20*	565753	3502	"BIGDB	34	46	1	0	87	53	5	18



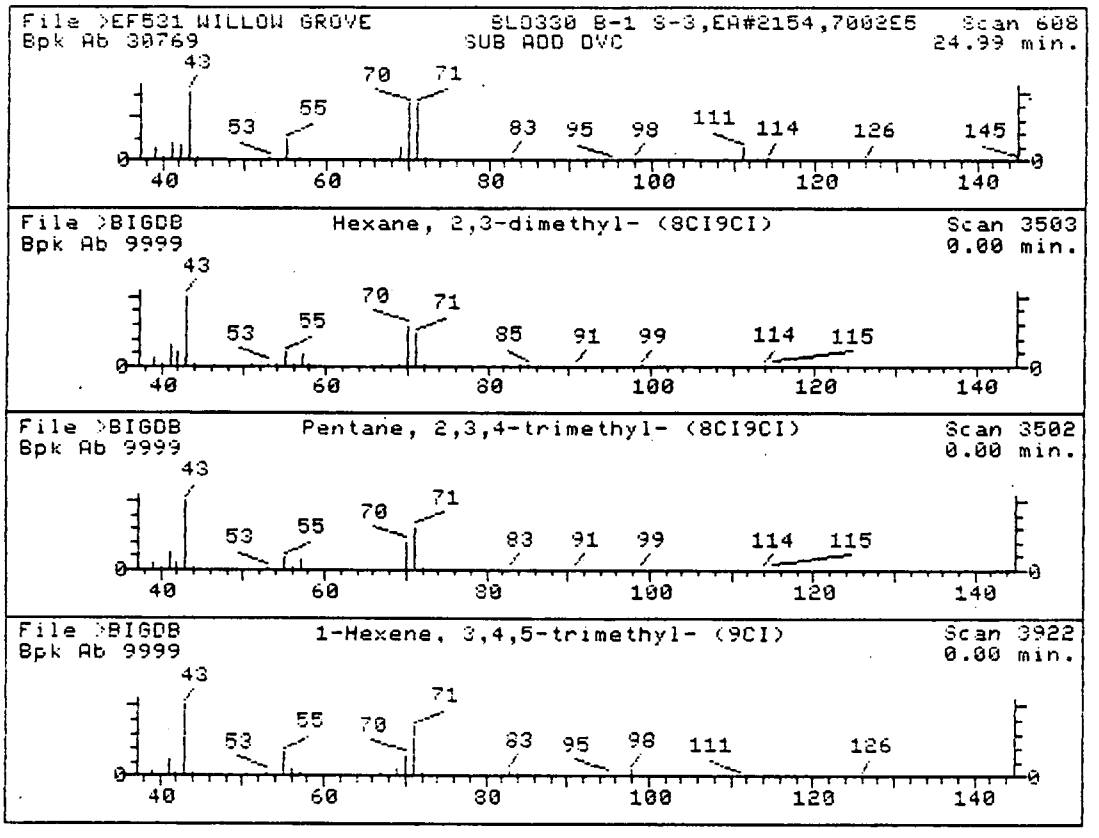
Retention time = 24.29

Area = 2092736. Tentative Concentration is 35.00

1.	Hexane, 3-ethyl- (8CI9CI)	114 C8H18
2.	Heptane, 2,3-dimethyl- (8CI9CI)	128 C9H20
3.	Heptane, 2,4-dimethyl- (8CI9CI)	128 C9H20
4.	Hexane, 2,4-dimethyl- (8CI9CI)	114 C8H18
5.	Hexane, 3-ethyl-2-methyl- (8CI9CI)	128 C9H20
6.	Octane (DOT)(8CI9CI)	114 C8H18
7.	Octane, 3,4-dimethyl- (8CI9CI)	142 C10H22

Sample file: >EF531 Spectrum #: 590
Search speed: 2 Tilting option: S No. of ion ranges searched: 50

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	77*	619998	5913	"BIGDB	61	29	0	0	93	25	41	73
2.	36	3074713	5924	"BIGDB	56	35	1	0	87	37	14	23
3.	34	2213232	5920	"BIGDB	58	34	1	0	74	42	12	25
4.	31*	589435	5910	"BIGDB	35	63	1	0	52	45	8	19
5.	31	16789461	5930	"BIGDB	54	33	2	0	77	42	8	19
6.	31	111659	6064	"BIGDB	55	38	1	0	67	42	12	22
7.	28	15869928	5929	"BIGDB	43	45	2	0	96	40	10	14



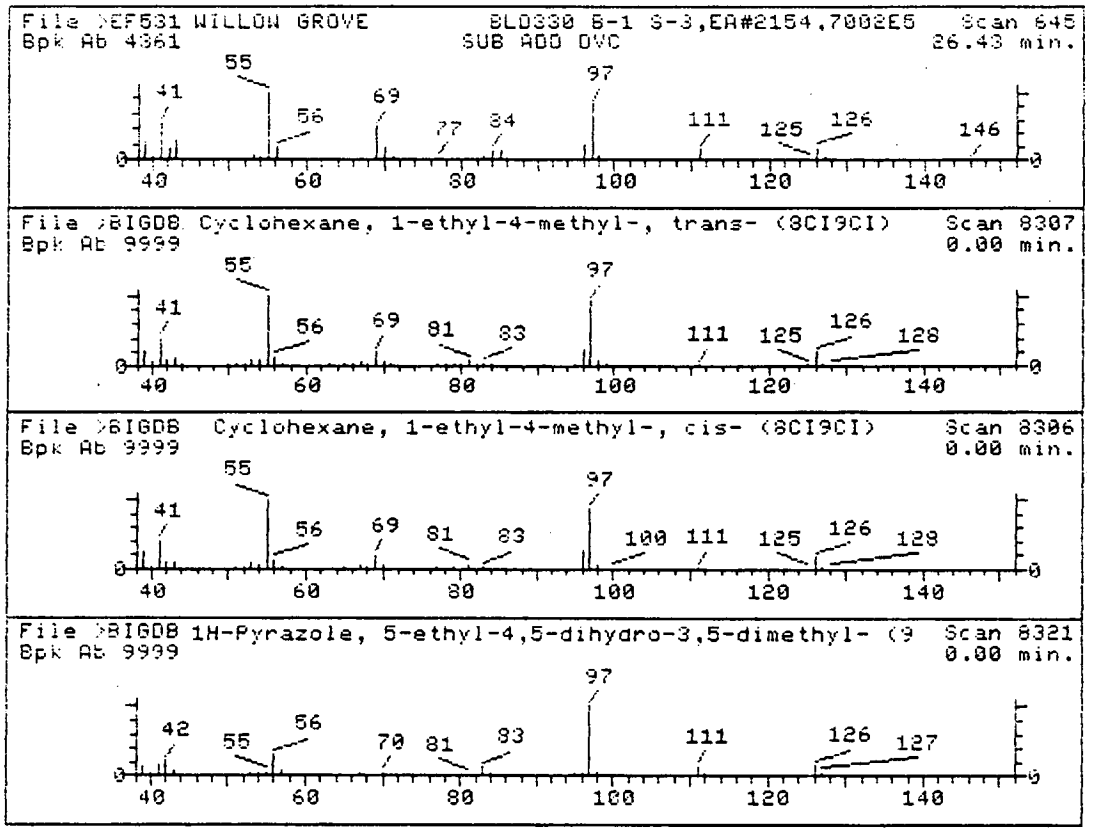
Retention time = 24.99

Area = 3075569. Tentative Concentration is 52.00

1.	Hexane, 2,3-dimethyl- (8CI9CI)	114	C8H18
2.	Pentane, 2,3,4-trimethyl- (8CI9CI)	114	C8H18
3.	1-Hexene, 3,4,5-trimethyl- (9CI)	126	C9H18
4.	Pentane, 3-bromo- (8CI9CI)	150	C5H11Br
5.	1-Pentene, 3,4-dimethyl- (8CI9CI)	98	C7H14
6.	Pentane, 1-(ethenyloxy)- (9CI)	114	C7H14O

Sample file: >EF531 Spectrum #: 608
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	52*	584941	3503	"BIGDB	39	48	3	0	100	20	20	16
2.	43*	565753	3502	"BIGDB	27	53	2	0	100	25	17	14
3.	34*	56728100	3922	"BIGDB	34	51	2	0	94	32	12	17
4.	26	1809105	3885	"BIGDB	34	42	1	0	86	39	10	12
5.	26*	7385786	3540	"BIGDB	24	80	3	0	135	38	10	12
6.	20*	5363633	8742	"BIGDB	24	62	3	0	100	53	5	12



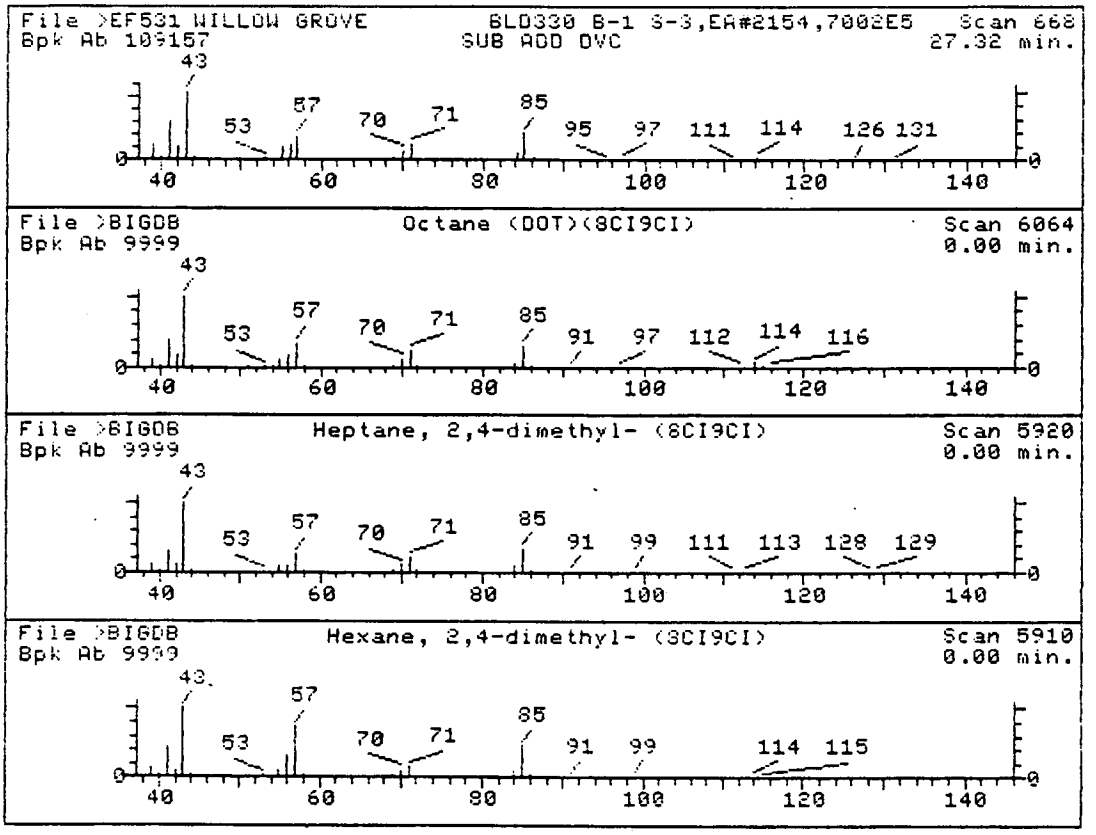
Retention time = 26.43

Area = 464410.0 Tentative Concentration is 8.00

1. Cyclohexane, 1-ethyl-4-methyl-, trans- (8CI9CI) 126 C9H18
2. Cyclohexane, 1-ethyl-4-methyl-, cis- (8CI9CI) 126 C9H18
3. 1H-Pyrazole, 5-ethyl-4,5-dihydro-3,5-dimethyl- (9CI) 126 C7H14N2
4. Cyclohexane, 1-ethyl-1-methyl- (8CI9CI) 126 C9H18
5. 3-Heptanone, 5-methylene- (8CI) 126 C8H14O
6. 1H-1,2,4-Triazole, 1-ethyl- (8CI9CI) 97 C4H7N3
7. Furan, 2,3-dihydro-4-(1-methylpropyl)-, (S)- (9CI) 126 C8H14O

Sample file: >EF531 Spectrum #: 645
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	59*	6236880	8307	"BIGDB	61	35	2	-1	69	23	27	30
2.	57*	4926787	8306	"BIGDB	60	36	2	-1	71	23	22	29
3.	48*	21981226	8321	"BIGDB	55	42	2	0	61	35	20	32
4.	43*	4926903	8248	"BIGDB	46	45	2	0	83	32	16	26
5.	41*	20690704	8197	"BIGDB	36	38	2	0	796	28	14	18
6.	36*	16778704	8219	"BIGDB	30	66	3	0	77	28	14	13
7.	33*	34379549	8317	"BIGDB	39	49	2	0	79	40	10	19



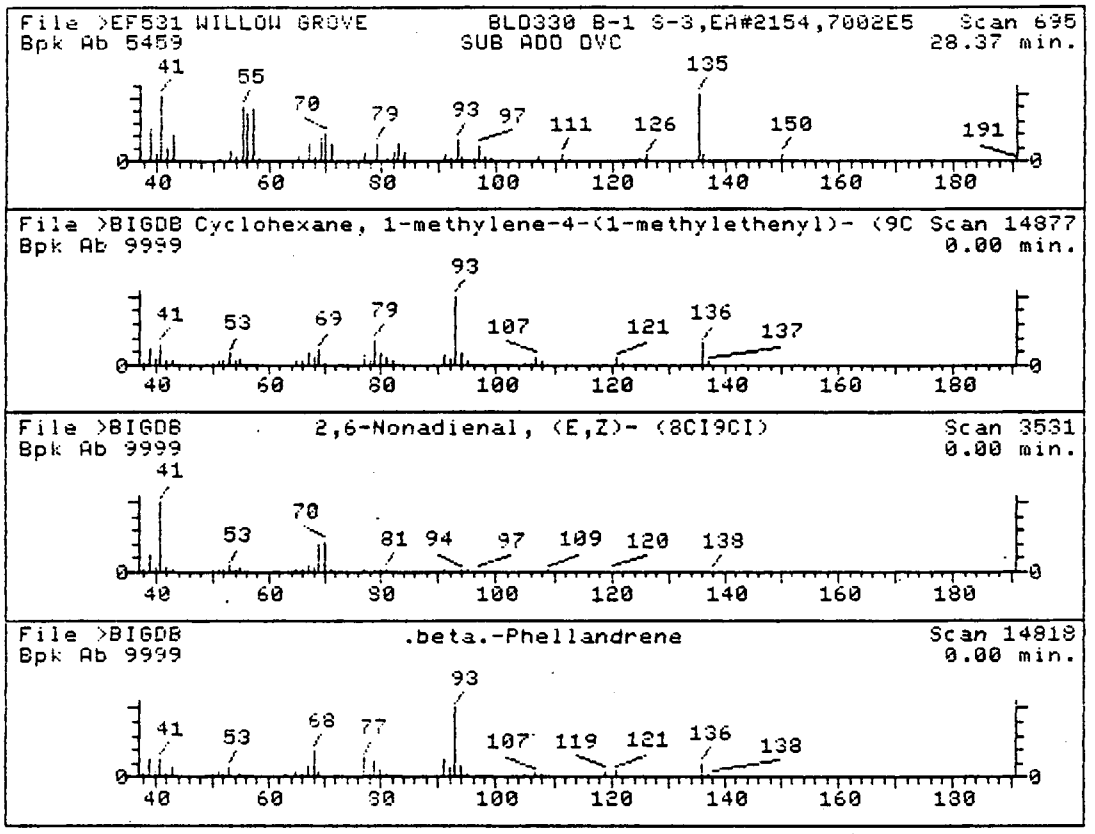
Retention time = 27.32

Area = .11E+08 Tentative Concentration is 180.00

1.	Octane (DOT)(8CI9CI)	114 C8H18
2.	Heptane, 2,4-dimethyl- (8CI9CI)	128 C9H20
3.	Hexane, 2,4-dimethyl- (8CI9CI)	114 C8H18
4.	Hexane, 3-ethyl- (8CI9CI)	114 C8H18
5.	Hexane, 2,3,4-trimethyl- (8CI9CI)	128 C9H20
6.	Hexane, 3,3-dimethyl- (8CI9CI)	114 C8H18
7.	Hexane, 2-methyl- (8CI9CI)	100 C7H16

Sample file: >EF531 Spectrum #: 668
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	79*	111659	6064	"BIGDB	72	21	1	1	100	12	43	67
2.	76	2213232	5920	"BIGDB	61	31	1	0	100	10	45	27
3.	76*	589435	5910	"BIGDB	50	48	2	0	72	10	45	25
4.	49*	619998	5913	"BIGDB	38	52	1	0	100	23	22	21
5.	46	921471	5917	"BIGDB	47	43	1	0	75	23	17	17
6.	44	563166	5991	"BIGDB	47	43	2	0	85	23	17	15
7.	42	591764	6010	"BIGDB	40	46	2	0	100	21	17	13



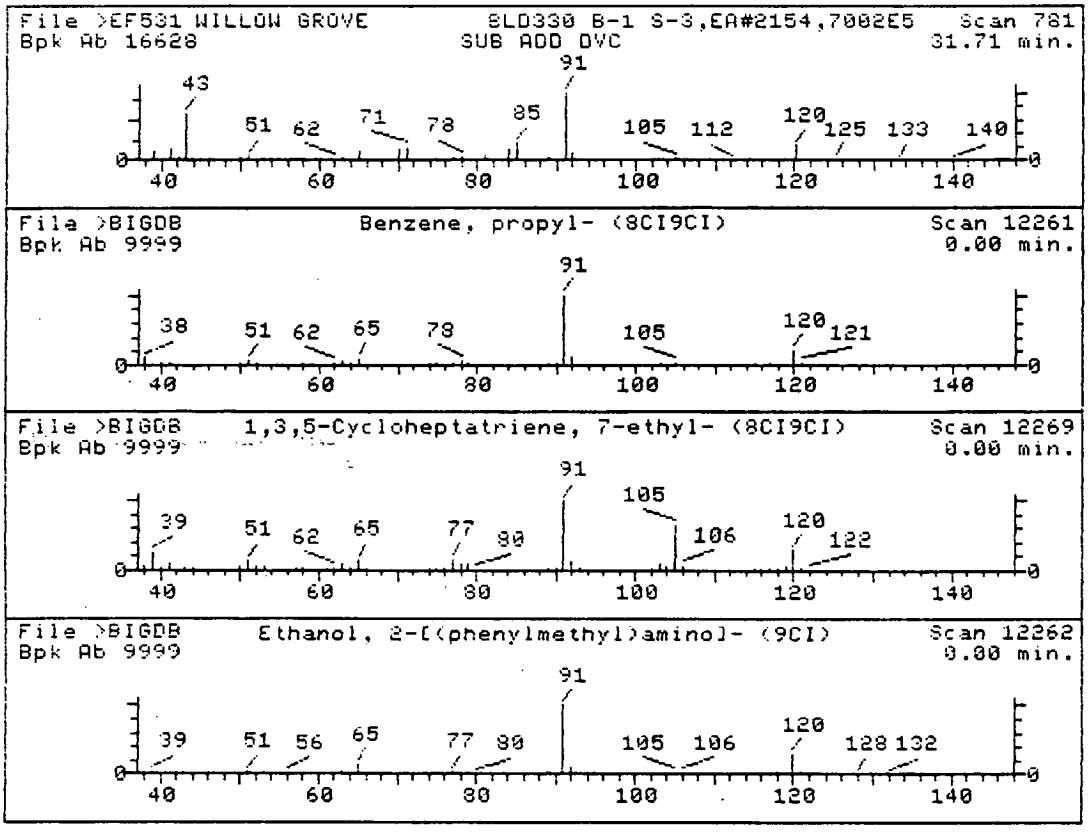
Retention time = 28.37 UNKNOWN

Area = 1598967. Tentative Concentration is 27.00

1. Cyclohexane, 1-methylene-4-(1-methylethenyl)- (9CI)	136	C10H16
2. 2,6-Nonadienal, (E,Z)- (8CI9CI)	138	C9H14O
3. .beta.-Phellandrene	136	C10H16
4. Cyclohexene, 4-methylene-1-(1-methylethyl)- (9CI)	136	C10H16
5. Tricyclo[3.3.1.13,7]decane, 1-nitro- (9CI)	181	C10H15NO2
6. 2-Propenal, di-2-propenylhydrazone (9CI)	150	C9H14N2
7. Silane, trimethylphenyl- (8CI9CI)	150	C9H14Si

Sample file: >EF531 Spectrum #: 695
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	52*	499978	14877	"BIGDB	54	26	2	4	18	29	24	32
2.	28*	557482	3531	"BIGDB	50	32	1	1	69	52	8	34
3.	25*	555102	14818	"BIGDB	40	54	2	1	28	45	8	13
4.	24*	99843	14813	"BIGDB	38	46	2	1	28	45	8	12
5.	20	7575828	14691	"BIGDB	61	46	2	0	81	55	5	13
6.	20*	18491208	17242	"BIGDB	44	40	2	2	50	54	5	16
7.	18*	768321	14725	"BIGDB	43	37	2	0	83	58	4	23



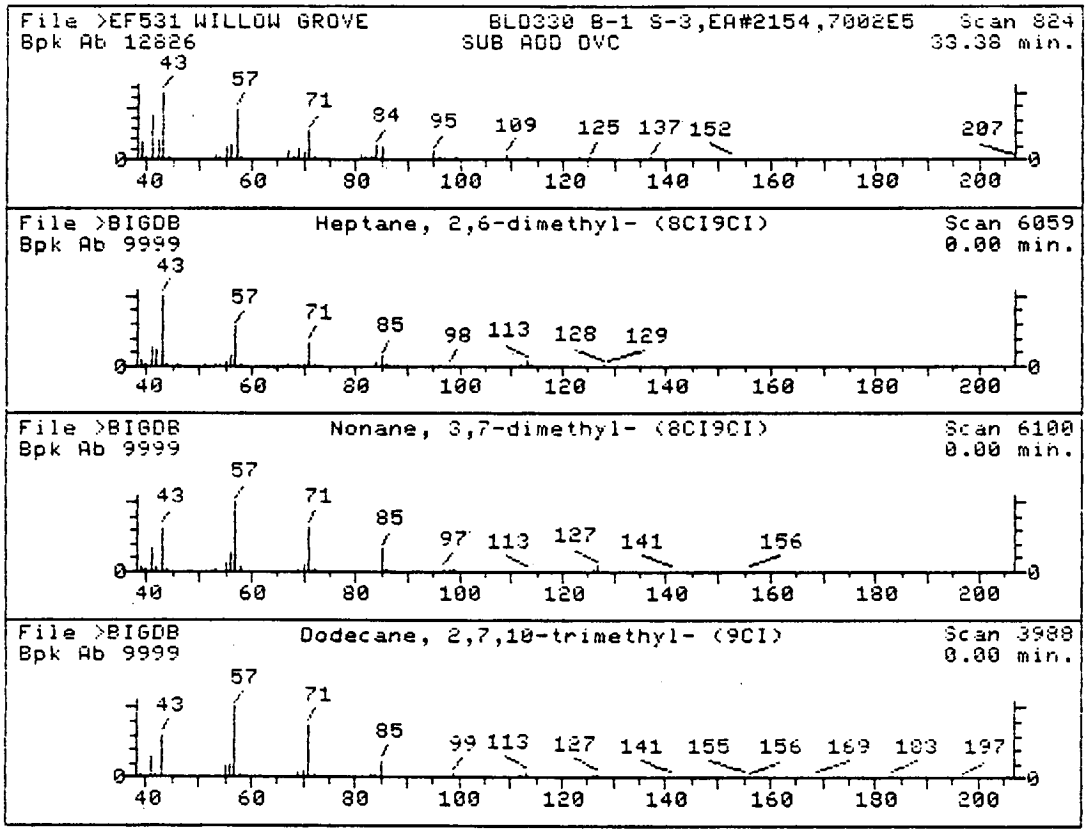
Retention time = 31.71 UNKNOWN

Area = 5096903. Tentative Concentration is 86.00

1.	Benzene, propyl- (8CI9CI)	120	C9H12
2.	1,3,5-Cycloheptatriene, 7-ethyl- (8CI9CI)	120	C9H12
3.	Ethanol, 2-[(phenylmethyl)amino]- (9CI)	151	C9H13NO
4.	1,6-Heptadiyne (8CI9CI)	92	C7H8
5.	Tricyclo[4.2.0.02,4]oct-7-en-5-one (9CI)	120	C8H8O

Sample file: >EF531 Spectrum #: 781
Search speed: 2 Tilting option: S No. of ion ranges searched: 56

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	46*	103651	12261	"BIGDB	52	33	2	0	100	36	17	35
2.	29*	17634514	12269	"BIGDB	41	60	2	0	74	38	10	15
3.	29	104632	12262	"BIGDB	46	33	2	0	73	38	10	15
4.	25*	2396636	7653	"BIGDB	25	71	2	0	91	46	7	14
5.	18*	56666785	12270	"BIGDB	41	48	2	0	85	60	4	21



Retention time = 33.38

Area = 2576629. Tentative Concentration is 43.00

1.	Heptane, 2,6-dimethyl- (8CI9CI)	128	C9H20
2.	Nonane, 3,7-dimethyl- (8CI9CI)	156	C11H24
3.	Dodecane, 2,7,10-trimethyl- (9CI)	212	C15H32
4.	Butane, 2,2-dimethyl- (8CI9CI)	86	C6H14
5.	Undecane, 4,6-dimethyl- (8CI)	184	C13H28
6.	Octane, 2-methyl- (8CI9CI)	128	C9H20
7.	Octane, 2,7-dimethyl- (8CI9CI)	142	C10H22

Sample file: >EF531 Spectrum #: 824
Search speed: 2 Tilting option: S No. of ion ranges searched: 65

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	59*	1072055	6059	"BIGDB	50	42	1	0	100	24	27	36
2.	52	17302328	6100	"BIGDB	51	35	2	0	59	17	20	17
3.	47	74645980	3988	"BIGDB	60	49	1	0	57	23	17	18
4.	43	75832	3877	"BIGDB	39	53	0	0	59	30	19	21
5.	41	17312822	3957	"BIGDB	59	39	1	3	86	26	14	18
6.	36*	3221612	6061	"BIGDB	42	53	2	0	100	31	12	19
7.	35	1072168	8726	"BIGDB	46	49	2	0	92	29	14	12

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B1S3 DL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2154

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF546

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 16. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 20.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	240.	U
74-83-9	Bromomethane	240.	U
75-01-4	Vinyl Chloride	240.	U
75-00-3	Chloroethane	240.	U
75-09-2	Methylene Chloride	120.	U
67-64-1	Acetone	240.	U
75-15-0	Carbon Disulfide	120.	U
75-35-4	1,1-Dichloroethene	120.	U
75-34-3	1,1-Dichloroethane	120.	U
540-59-0	1,2-Dichloroethene (total)	120.	U
67-66-3	Chloroform	120.	U
107-06-2	1,2-Dichloroethane	120.	U
78-93-3	2-Butanone	240.	U
71-55-6	1,1,1-Trichloroethane	120.	U
56-23-5	Carbon Tetrachloride	120.	U
108-05-4	Vinyl Acetate	240.	U
75-27-4	Bromodichloromethane	120.	U
78-87-5	1,2-Dichloropropane	120.	U
10061-01-5	cis-1,3-Dichloropropene	120.	U
79-01-6	Trichloroethene	120.	U
124-48-1	Dibromochloromethane	120.	U
79-00-5	1,1,2-Trichloroethane	120.	U
71-43-2	Benzene	120.	U
10061-02-6	trans-1,3-Dichloropropene	120.	U
75-25-2	Bromoform	120.	U
108-10-1	4-Methyl-2-Pentanone	240.	U
591-78-6	2-Hexanone	240.	U
127-18-4	Tetrachloroethene	120.	U
79-34-5	1,1,2,2-Tetrachloroethane	120.	U
108-88-3	Toluene	120.	U
108-90-7	Chlorobenzen	120.	U
100-41-4	Ethylb nz n	4800.	ED
100-42-5	Styr ne	120.	U
1330-20-7	Xylene (total)	6900.	D

FORM I VOA 1/87 Rev.

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B1S3 DL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2154

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF546

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 16. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 20.00

Number TICs found: 17

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	13.65	200.	J
2.	96-14-0	Pentane, 3-methyl- (8CI9CI)	17.57	200.	J
3.	- -	UNKNOWN	18.22	300.	J
4.	565-59-3	Pentane, 2,3-dimethyl- (8CI9	19.39	100.	J
5.	- -	UNKNOWN	19.70	100.	J
6.	589-34-4	Hexane, 3-methyl- (8CI9CI)	20.59	800.	J
7.	591-76-4	Hexane, 2-methyl- (8CI9CI)	21.10	400.	J
8.	29812-79-1	Hydroxylamine, O-decyl- (8CI	21.87	200.	J
9.	- -	UNKNOWN	24.39	200.	J
10.	- -	UNKNOWN	25.05	400.	J
11.	111-65-9	Octane (DOT)(8CI9CI)	27.38	200.	J
12.	103-65-1	Benzene, propyl- (8CI9CI)	31.92	3000.	J
13.	98-82-8	Benzene, (1-methylethyl)- (9	35.34	6000.	J
14.	611-14-3	Benzene, 1-ethyl-2-methyl- (	36.62	6000.	J
15.	99-87-6	Benzene, 1-methyl-4-(1-methy	38.80	1000.	J
16.	- -	UNKNOWN	45.04	2000.	J
17.	622-96-8	Benzene, 1-ethyl-4-methyl- (	51.33	20000.	J
18.					
19.					
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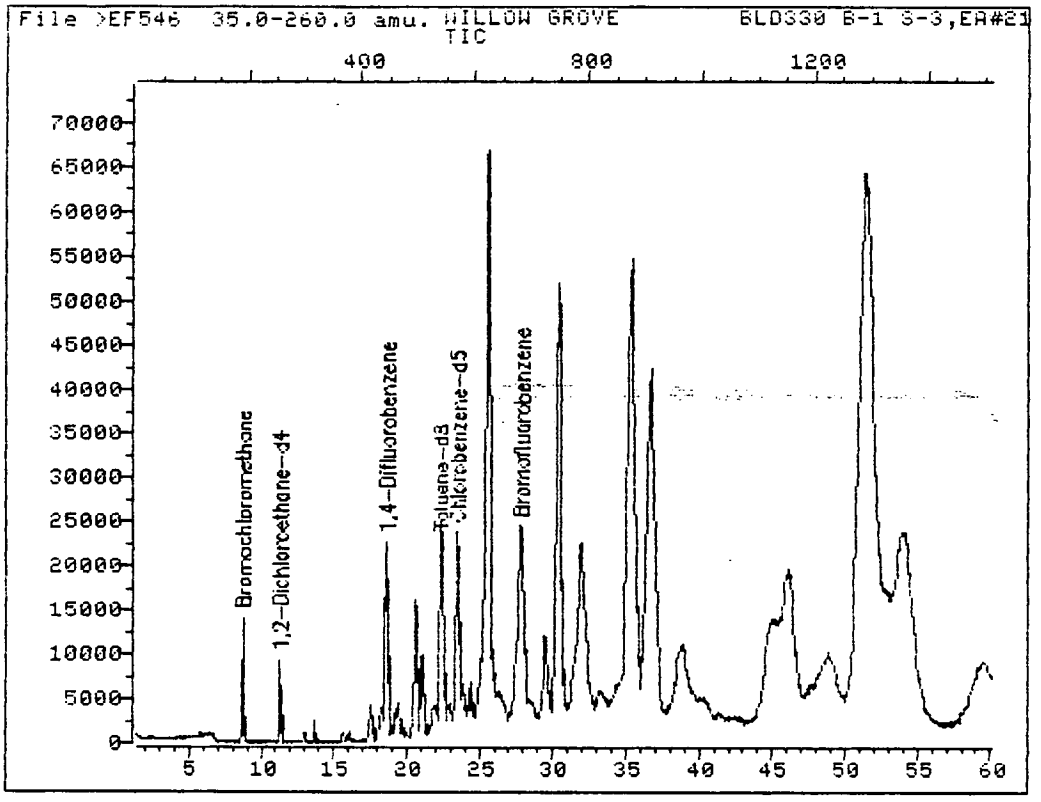
30.					

TOTAL ION CHROMATOGRAM



Data File: >EF546::D2 Quant Output File: ^EF546::QT
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL (1/20 DIL)

Id File: EVOAS::SD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 11:51
Injected at: 890511 10:46

QUANT REPORT

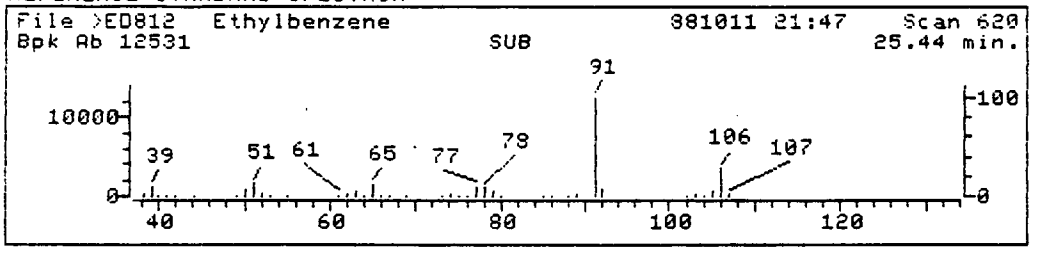
Operator ID: CARL Quant Rev: 6 Quant Time: 890511 11:51
Output File: ^EF546::QT Injected at: 890511 10:46
Data File: >EF546::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL (1/20 DIL)

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

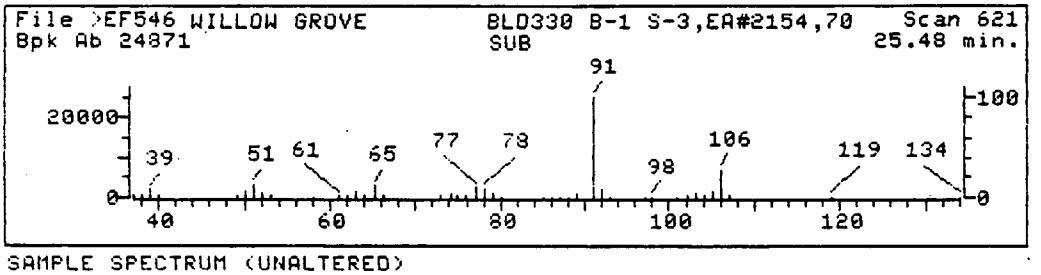
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.68	128.0	18869	50.00	UG/KG	84
13)	1,2-Dichloroethane-d4	11.24	65.0	39330	50.98	UG/KG	85
15)	*1,4-Difluorobenzene	18.61	114.0	68369	50.00	UG/KG	91
29)	*Chlorobenzene-d5	23.50	117.0	61737	50.00	UG/KG	93
35)	Toluene-d8	22.30	98.0	67309	51.23	UG/KG	96
37)	Ethylbenzene	25.48	106.0	96823	201.99	UG/KG	99
39)	Xylene (total)	30.33	106.0	181353M	291.20	UG/KG	97
40)	Bromofluorobenzene	27.85	95.0	64619	49.65	UG/KG	91

* Compound is ISTD

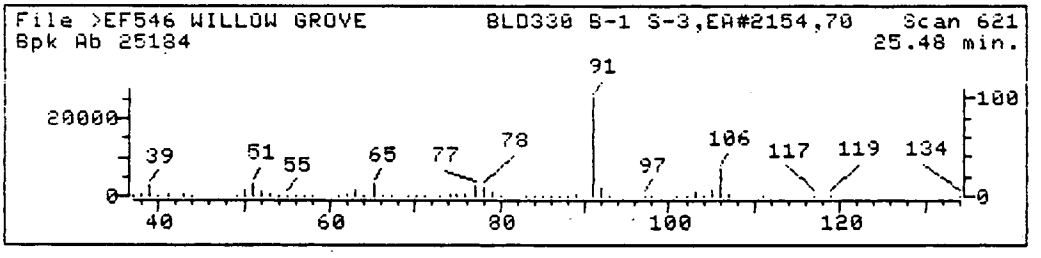
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



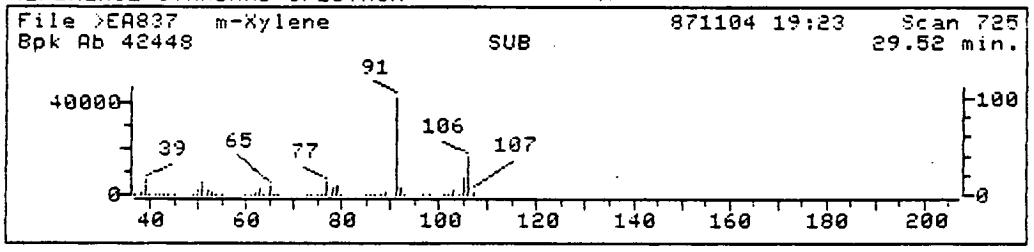
SAMPLE SPECTRUM (UNALTERED)



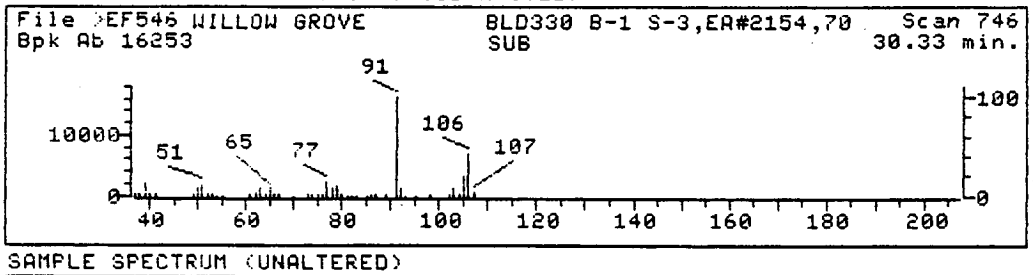
Data File: >EF546::D2 Quant Output File: ^EF546::QT
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL (1/20 DIL)
Quant Time: 890511 11:51 Quant ID File: EVOAS::BD
Injected at: 890511 10:46 Last Calibration: 890511 08:55

Compound No: 37
Compound Name: Ethylbenzene
Scan Number: 621
Retention Time: 25.48 min.
Quant Ion: 106.0
Area: 96823
Conc ntration: 201.99 UG/KG
q-value: 99

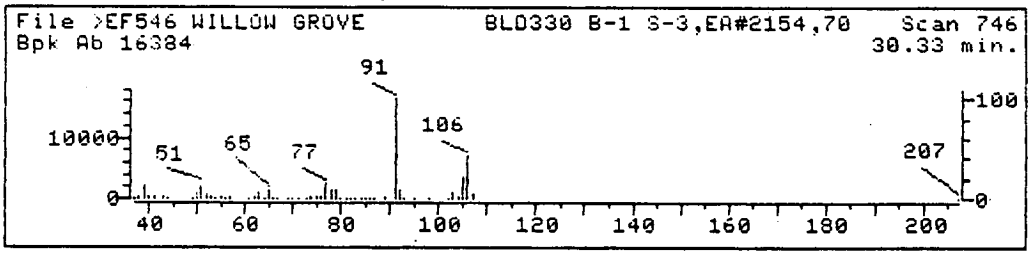
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

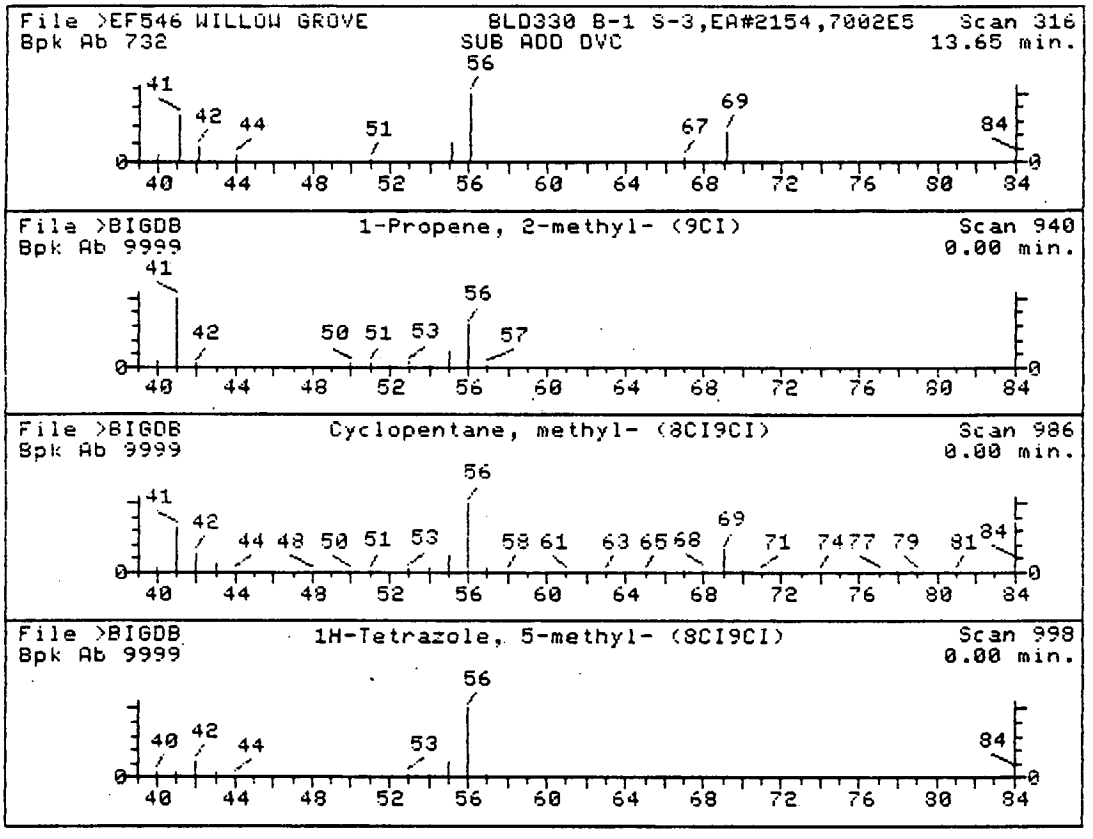


SAMPLE SPECTRUM (UNALTERED)



Data File: >EF546::D2 Quant Output File: ^EF546::QT
Name: WILLOW GROVE
Misc: BLD330 B-1 S-3,EA#2154,7002E5,SOIL (1/20 DIL)
Quant Time: 890511 11:51 Quant ID File: EVOAS::8D
Injected at: 890511 10:46 Last Calibration: 890511 08:55

Compound No: 39
Compound Name: Xylene (total)
Scan Number: 746
Retention Time: 30.33 min.
Quant Ion: 106.0
Area: 160513
Concentration: 291.20 UG/KG
q-value: 97



Retention time = 13.65 UNKNOWN

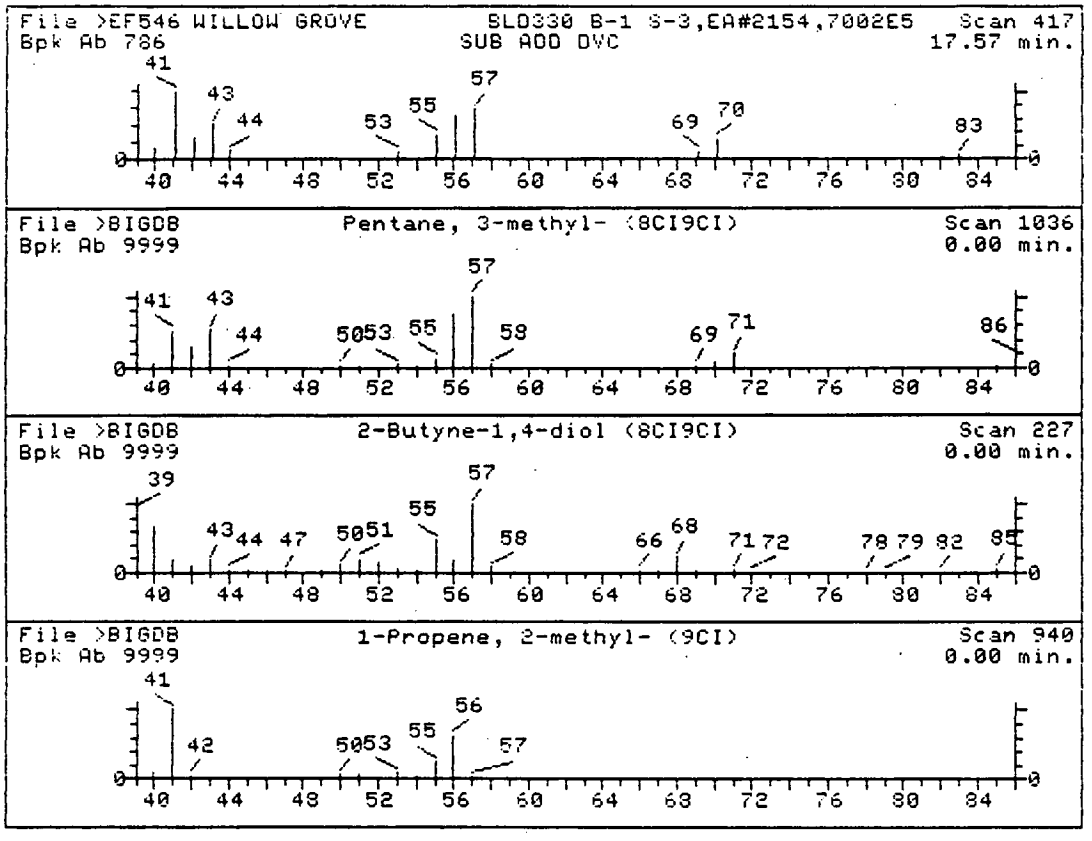
Area = 27756.00 Tentative Concentration is 10.00

1.	1-Propene, 2-methyl- (9CI)	56 C4H8
2.	Cyclopentane, methyl- (8CI9CI)	84 C6H12
3.	1H-Tetrazole, 5-methyl- (8CI9CI)	84 C2H4N4
4.	6-Oxabicyclo[3.1.0]hexane (8CI9CI)	84 C5H8O
5.	4-Pentenal (8CI9CI)	84 C5H8O

Sample file: >EF546 Spectrum #: 316
S arch speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	30*	115117	940	"BIGDB	25	48	3	0	118	33	12	13
2.	27*	96377	986	"BIGDB	23	64	2	0	68	40	10	13
3.	26*	4076362	998	"BIGDB	29	55	2	0	100	42	8	14
4.	25*	285676	59	"BIGDB	32	73	3	0	82	50	7	13

5.	15*	2100176	996	"BIGDB	22	92	3	0	54	58	3	12



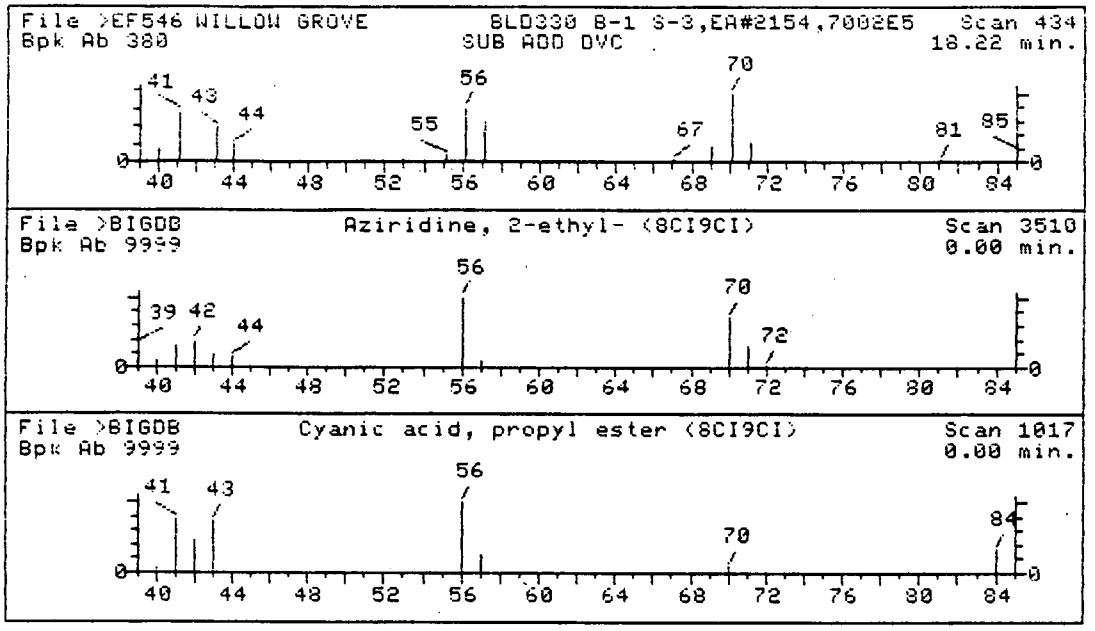
Retention time = 17.57

Area = 49928.00 Tentative Concentration is 9.00

1.	Pentane, 3-methyl- (8CI9CI)	86 C6H14
2.	2-Butyne-1,4-diol (8CI9CI)	86 C4H6O2
3.	1-Propene, 2-methyl- (9CI)	56 C4H8
4.	2-Butene (8CI9CI)	56 C4H8

Sample file: >EF546 Spectrum #: 417
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	30*	96140	1036	"BIGDB	37	56	3	0	73	35	12	13
2.	24*	110656	227	"BIGDB	23	90	3	0	54	41	8	12
3.	15*	115117	940	"BIGDB	32	41	2	0	100	56	3	16
4.	11*	107017	939	"BIGDB	26	55	2	0	100	61	2	14



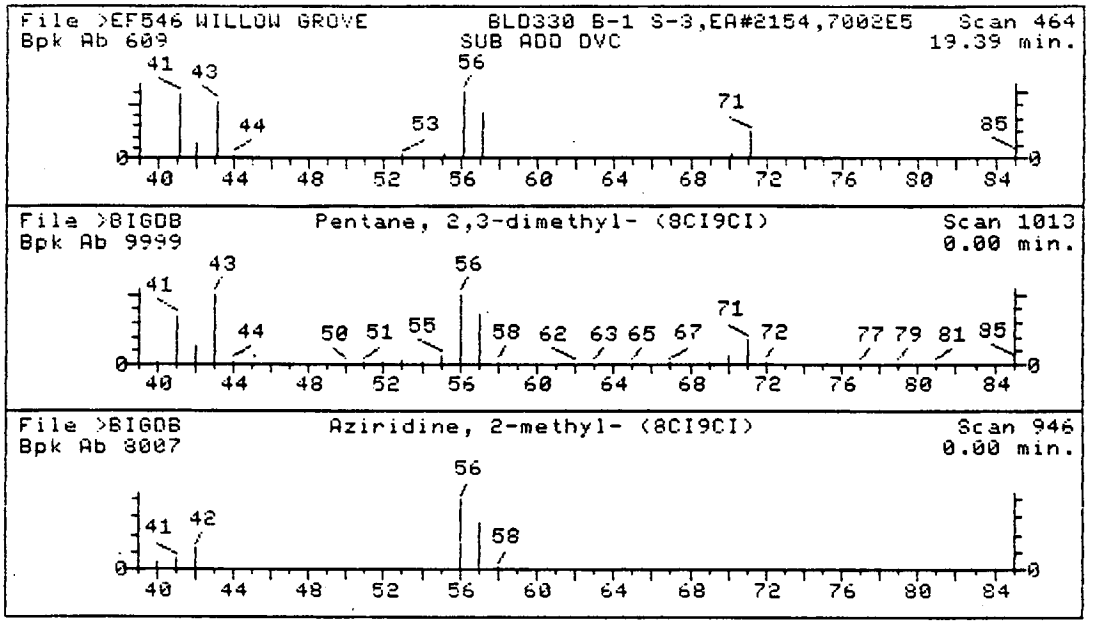
Retention time = 18.22 Unknown

Area = 62130.00 Tentative Concentration is 11.00

1. Aziridine, 2-ethyl- (8CI9CI) 71 C4H9N
2. Cyanic acid, propyl ester (8CI9CI) 85 C4H7NO

Sample file: >EF546 Spectrum #: 434
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	25*	2549679	3510	"BIGDB	20	78	2	0	79	46	7	13
2.	20*	1768361	1017	"BIGDB	20	85	2	0	69	53	5	13



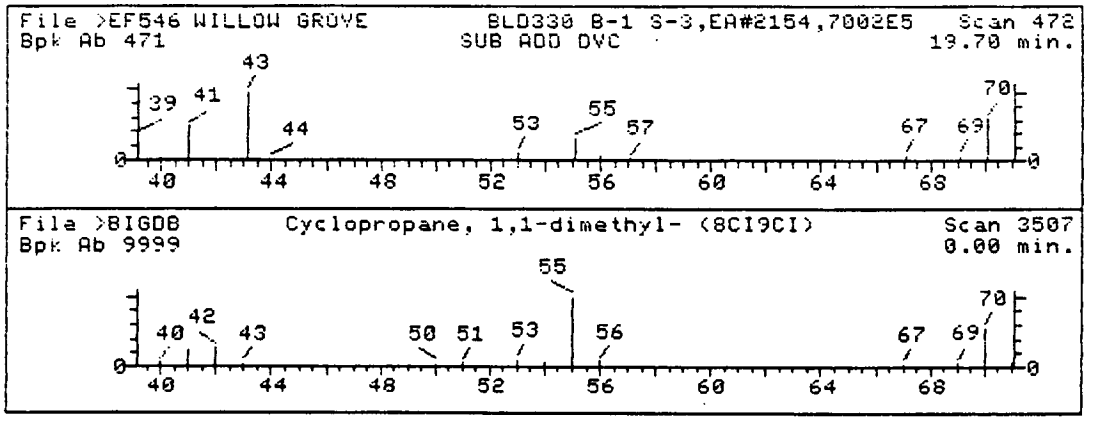
Retention time = 19.39

Area = 34905.00 Tentative Concentration is 6.00

1. Pentane, 2,3-dimethyl- (8CI9CI) 100 C7H16
2. Aziridine, 2-methyl- (8CI9CI) 57 C3H7N

Sample file: >EF546 Spectrum #: 464
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	60	565593	1013	"BIGDB	48	47	2	0	80	12	30	13
2.	15*	75558	946	"BIGDB	22	45	2	0	73	58	3	13



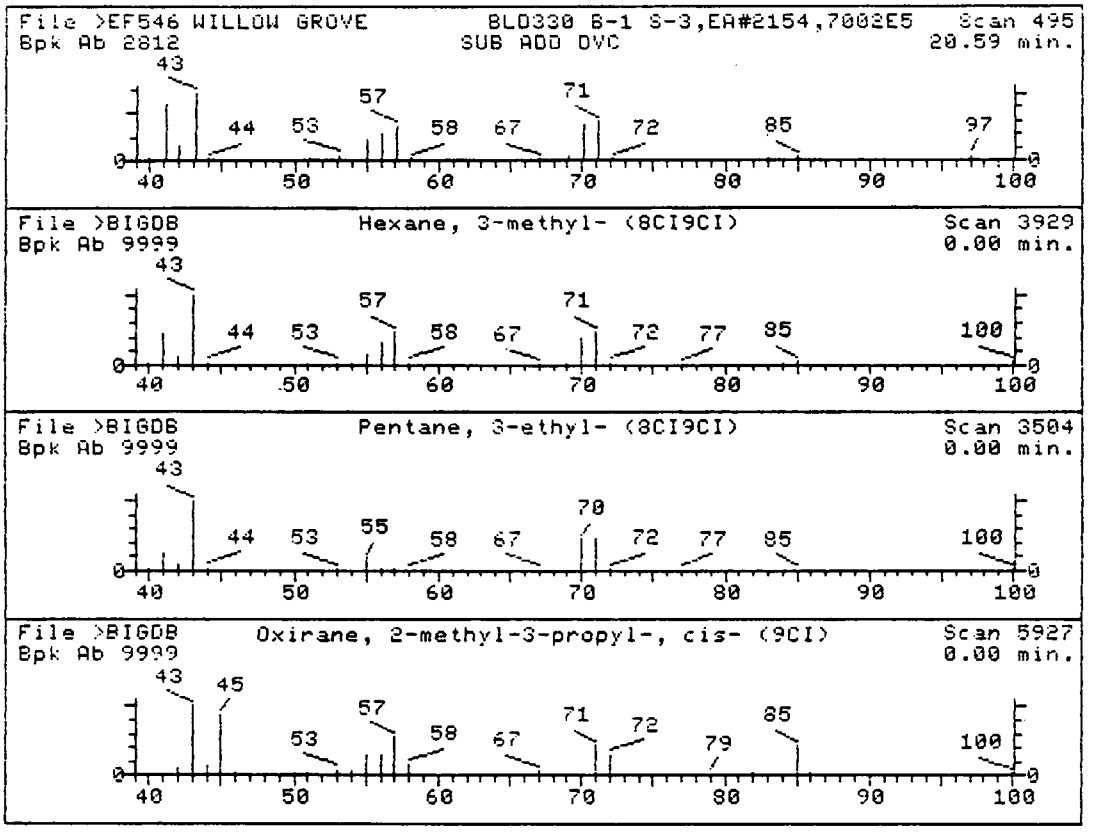
Retention time = 19.70 UNKNOWN

Area = 29989.00 Tentative Concentration is 5.00

1. Cyclopropane, 1,1-dimethyl- (8CI9CI) 70 C5H10

Sample file: >EF546 Spectrum #: 472
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	15*	1630940	3507	"BIGDB	23	60	3	0	113	58	3	12



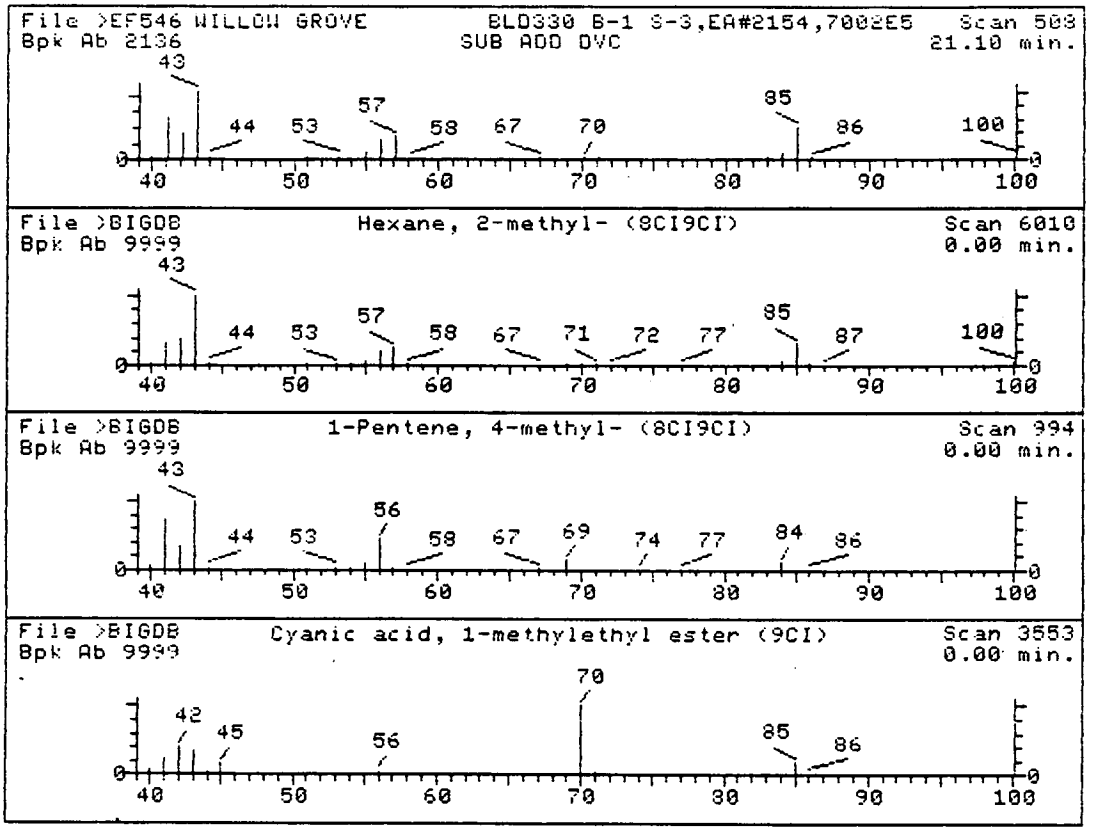
Retention time = 20.59

Area = 200607.0 Tentative Concentration is 34.00

1.	Hexane, 3-methyl- (8CI9CI)	100	C7H16
2.	Pentane, 3-ethyl- (8CI9CI)	100	C7H16
3.	Oxirane, 2-methyl-3-propyl-, cis- (9CI)	100	C6H12O
4.	Heptane, 4-methyl- (8CI9CI)	114	C8H18
5.	Pentane, 2,4-dimethyl- (8CI9CI)	100	C7H16
6.	Hexane, 2,3-dimethyl- (8CI9CI)	114	C8H18
7.	Pentane, 2,3-dimethyl- (8CI9CI)	100	C7H16

Sample file: >EF546 Spectrum #: 495
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IU
1.	79*	589344	3929	"BIGDB	57	36	0	0	100	15	43	69
2.	36*	617787	3504	"BIGDB	32	51	0	0	100	41	12	27
3.	30*	6124909	5927	"BIGDB	25	79	3	0	93	35	12	13
4.	29	589537	3550	"BIGDB	42	45	1	0	85	39	10	15
5.	29*	108087	1009	"BIGDB	34	50	2	0	69	44	8	17
6.	28	584941	3503	"BIGDB	38	49	1	0	91	40	10	14
7.	25*	565593	1013	"BIGDB	30	65	1	0	71	47	7	16



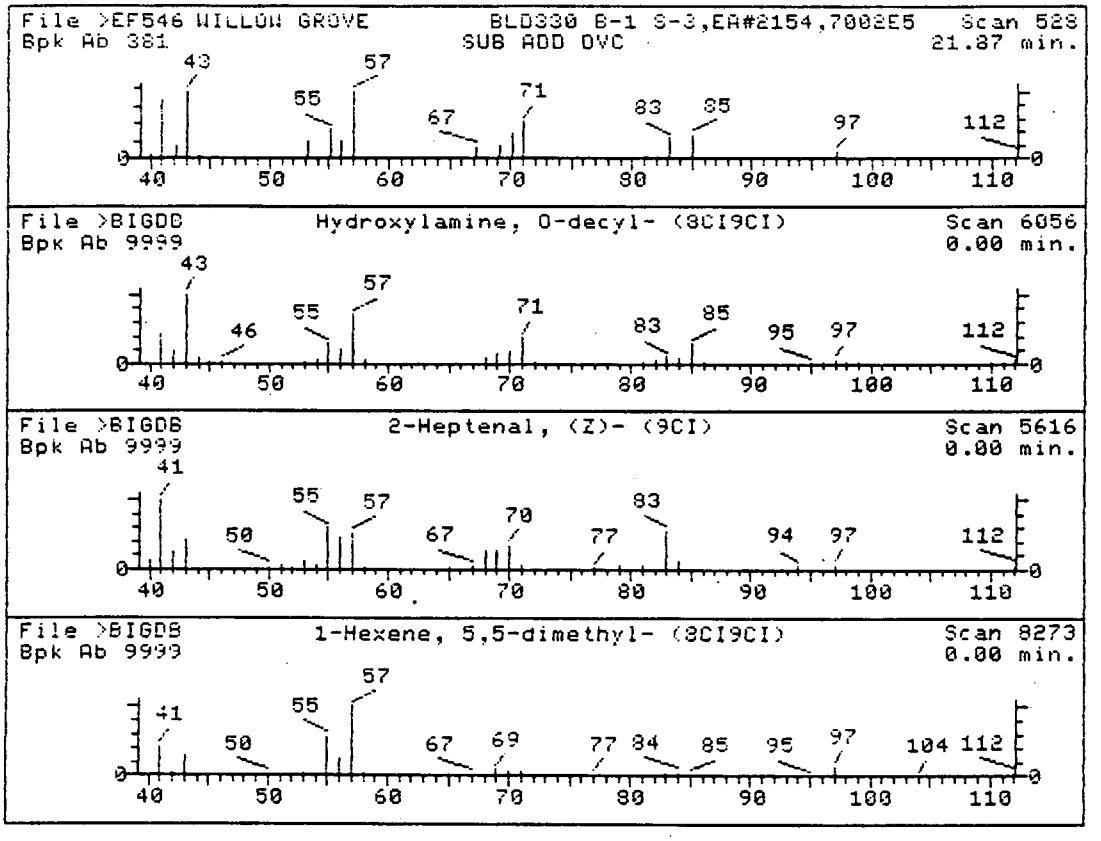
Retention time = 21.10

Area = 105136.0 Tentative Concentration is 16.00

1.	Hexane, 2-methyl- (8CI9CI)	100	C7H16
2.	1-Pentene, 4-methyl- (8CI9CI)	84	C6H12
3.	Cyanic acid, 1-methylethyl ester (9CI)	85	C4H7NO
4.	Pentane, 2,3,3,4-tetramethyl- (8CI9CI)	128	C9H20
5.	Butane, 2,2,3-trimethyl- (8CI9CI)	100	C7H16
6.	Pyrrolidine, 3-methyl- (8CI9CI)	85	C5H11N
7.	Furan, tetrahydro-2,4-dimethyl-, trans- (9CI)	100	C6H12O

Sample file: >EF546 Spectrum #: 508
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	83*	591764	6010	"BIGDB	61	25	0	0	100	14	51	74
2.	32*	691372	994	"BIGDB	44	41	3	0	85	38	10	18
3.	30*	1768372	3553	"BIGDB	25	60	3	0	264	31	12	13
4.	28	16747389	5967	"BIGDB	43	39	2	0	81	37	10	14
5.	26	464062	5908	"BIGDB	36	48	2	0	115	38	10	12
6.	25*	34375898	5939	"BIGDB	21	59	2	0	100	41	8	13
7.	25*	39168020	6023	"BIGDB	22	61	3	0	483	50	7	12



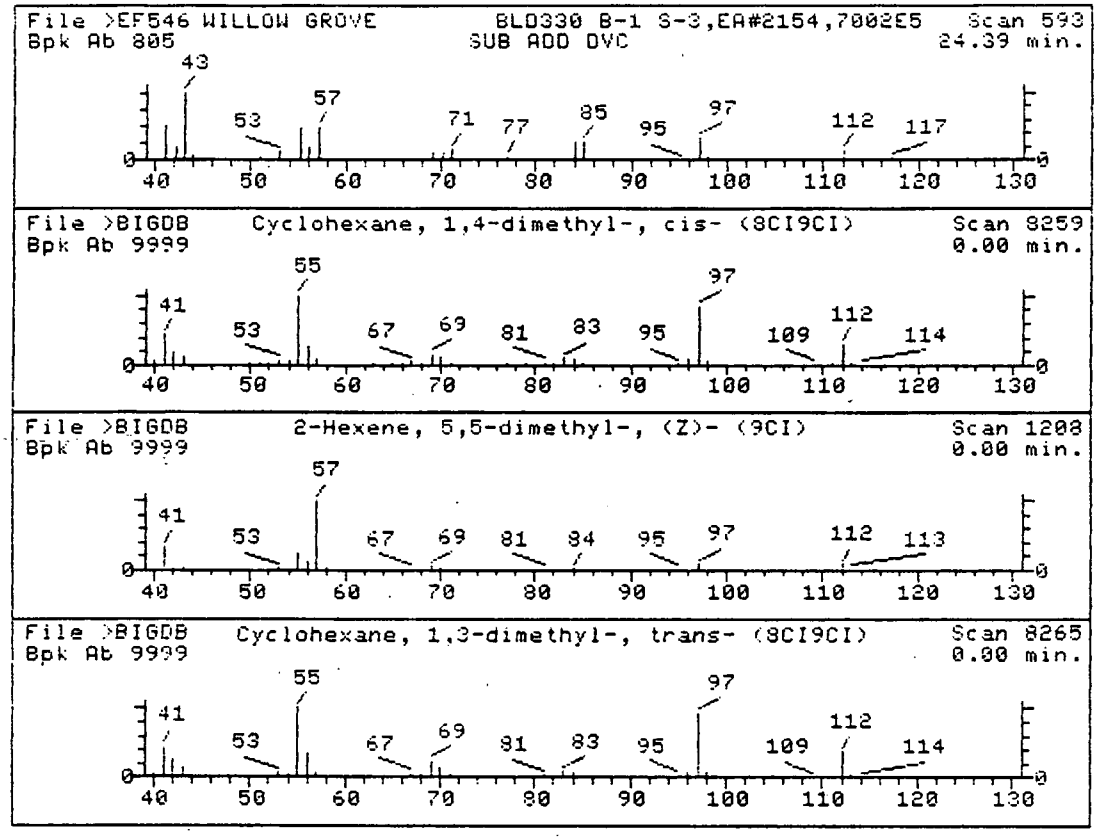
Retention time = 21.87

Area = 65572.00 Tentative Concentration is 10.00

1. Hydroxylamine, O-decyl- (8CI9CI) 173 C10H23NO
2. 2-Heptenal, (Z)- (9CI) 112 C7H12O
3. 1-Hexene, 5,5-dimethyl- (8CI9CI) 112 C8H16

Sample file: >EF546 Spectrum #: 528
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	33	29812791	6056	"BIGDB	63	42	2	0	100	33	12	16
2.	20*	57266861	5616	"BIGDB	33	77	3	0	71	53	5	13
3.	15*	7116861	8273	"BIGDB	28	55	2	0	74	57	3	14



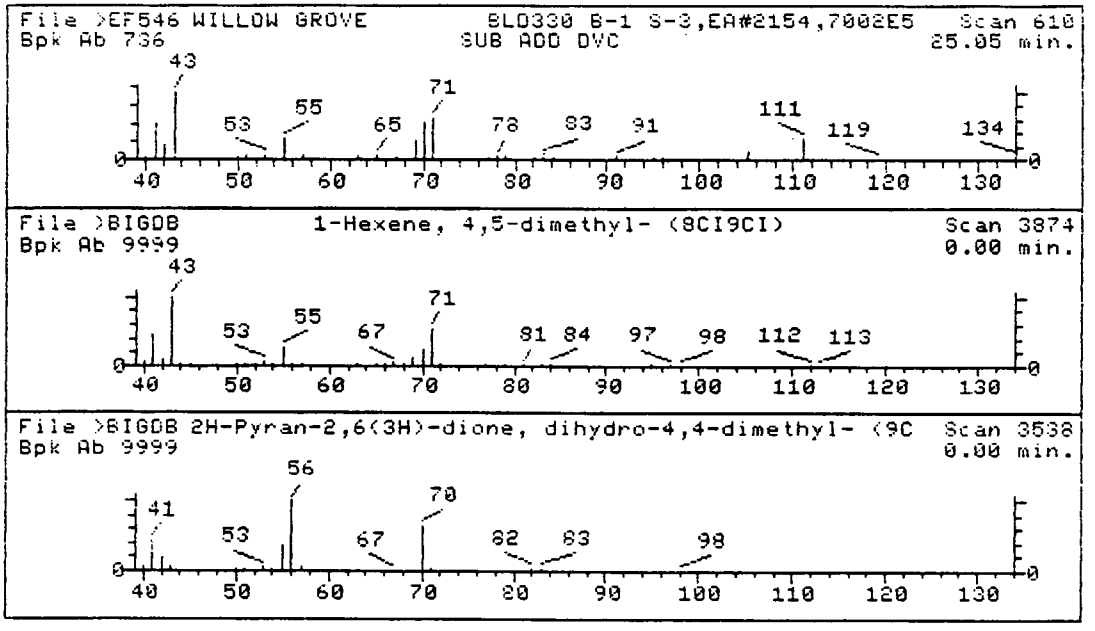
Retention time = 24.39 UNKNOWN

Area = 51491.00 Tentative Concentration is 8.00

1.	Cyclohexane, 1,4-dimethyl-, cis- (8CI9CI)	112	C8H16
2.	2-Hexene, 5,5-dimethyl-, (Z)- (9CI)	112	C8H16
3.	Cyclohexane, 1,3-dimethyl-, trans- (8CI9CI)	112	C8H16
4.	2-Pyrazoline, 1,4,5-trimethyl- (8CI)	112	C6H12N2
5.	1-Hexene, 5,5-dimethyl- (8CI9CI)	112	C8H16
6.	7-Oxabicyclo[4.1.0]heptane, 1-methyl- (8CI9CI)	112	C7H12O
7.	Piperidine (8CI9CI)	85	C5H11N

Sample file: >EF546 Spectrum #: 593
Search speed: 2 Tilting option: S No. of ion ranges searched: 51

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	20*	624293	8259	"BIGDB	27	60	3	0	46	54	5	13
2.	15*	39761610	1208	"BIGDB	27	47	3	0	153	60	3	13
3.	15*	2207036	8265	"BIGDB	31	54	2	0	34	58	3	15
4.	15*	7423112	8274	"BIGDB	26	53	2	0	32	56	3	14
5.	15*	7116861	8273	"BIGDB	23	60	3	0	83	58	3	12
6.	15*	1713333	8263	"BIGDB	32	73	3	0	97	56	3	13
7.	15*	110894	5714	"BIGDB	21	63	2	0	25	58	3	13



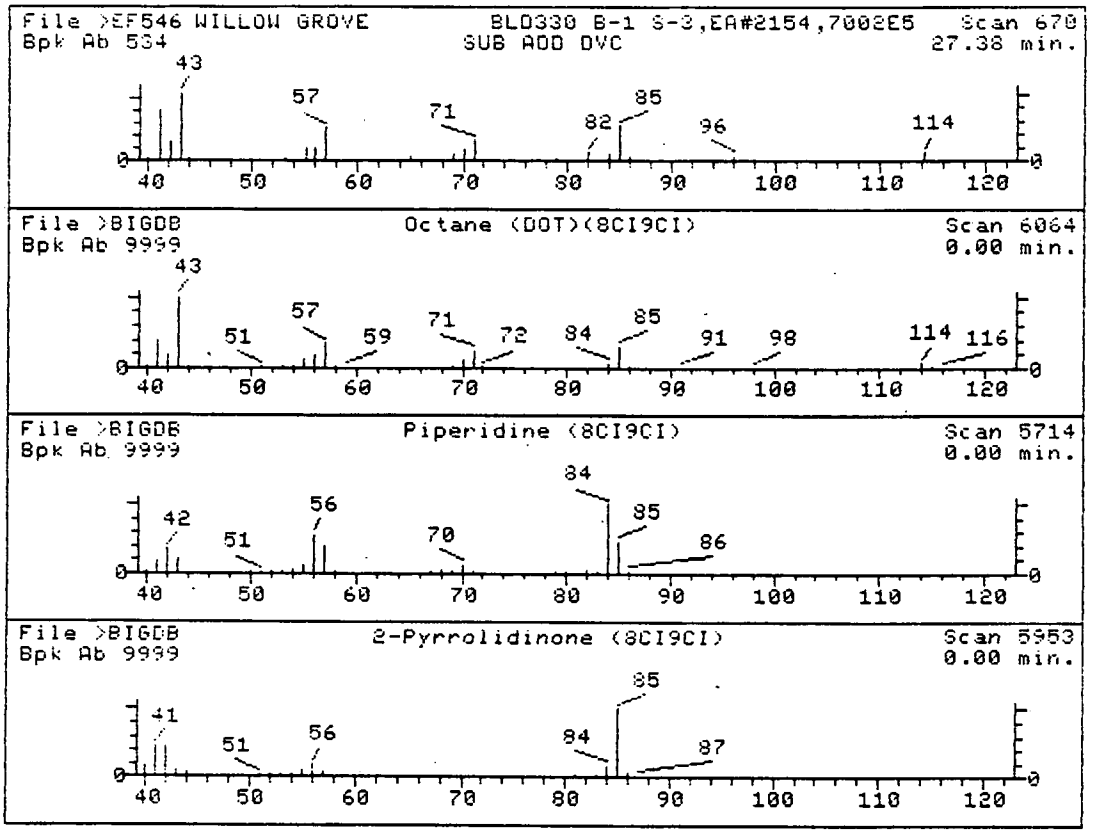
Retention time = 25.05 UNKNOWN

Area = 105201.0 Tentative Concentration is 16.00

1. 1-Hexene, 4,5-dimethyl- (8CI9CI) 112 C8H16
2. 2H-Pyran-2,6(3H)-dione, dihydro-4,4-dimethyl- (9CI) 142 C7H10O3

Sample file: >EF546 Spectrum #: 610
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	15	16106595	3874	"BIGDB	40	47	2	0	100	58	3	13
2.	11	4160821	3538	"BIGDB	36	46	2	0	87	63	2	12



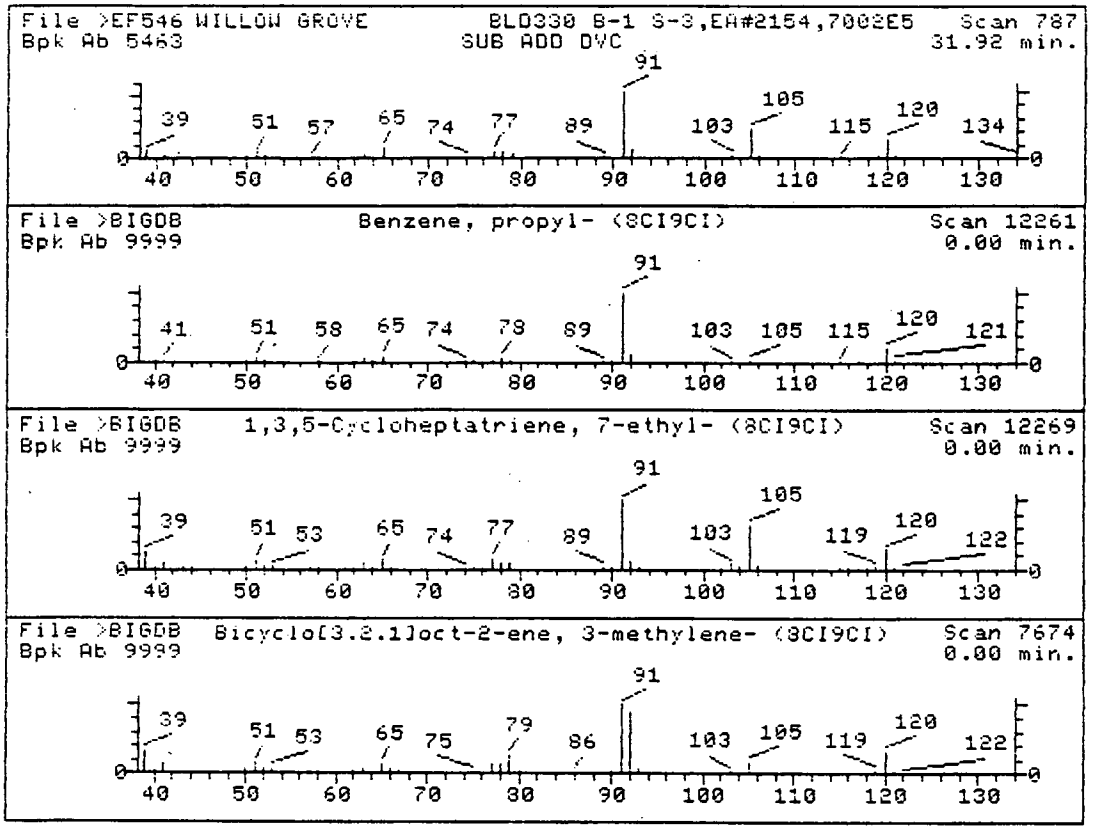
Retention time = 27.38

Area = 47826.00 Tentative Concentration is 7.00

1.	Octane (DOT)(8CI9CI)	114	C8H18
2.	Piperidine (8CI9CI)	85	C5H11N
3.	2-Pyrrolidinone (8CI9CI)	85	C4H7NO
4.	2H-Pyran-2-one, tetrahydro-6-methyl- (8CI9CI)	114	C6H10O2
5.	Hexane, 3-ethyl- (8CI9CI)	114	C8H18
6.	Hexane, 2,4-dimethyl- (8CI9CI)	114	C8H18
7.	6-Oxabicyclo[3.1.0]hexane (8CI9CI)	84	C5H8O

Sample file: >EF546 Spectrum #: 670
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	33*	111659	6064	"BIGDB	45	48	2	0	100	45	12	24
2.	20*	110894	5714	"BIGDB	26	73	3	0	110	52	5	13
3.	15*	616455	5953	"BIGDB	39	52	2	0	51	60	3	19
4.	15*	823223	965	"BIGDB	29	64	3	0	77	57	3	13
5.	15*	619998	5913	"BIGDB	27	63	2	0	129	58	3	14
6.	15*	589435	5910	"BIGDB	31	67	1	0	67	58	3	17
7.	15*	285676	59	"BIGDB	26	79	3	0	89	58	3	13



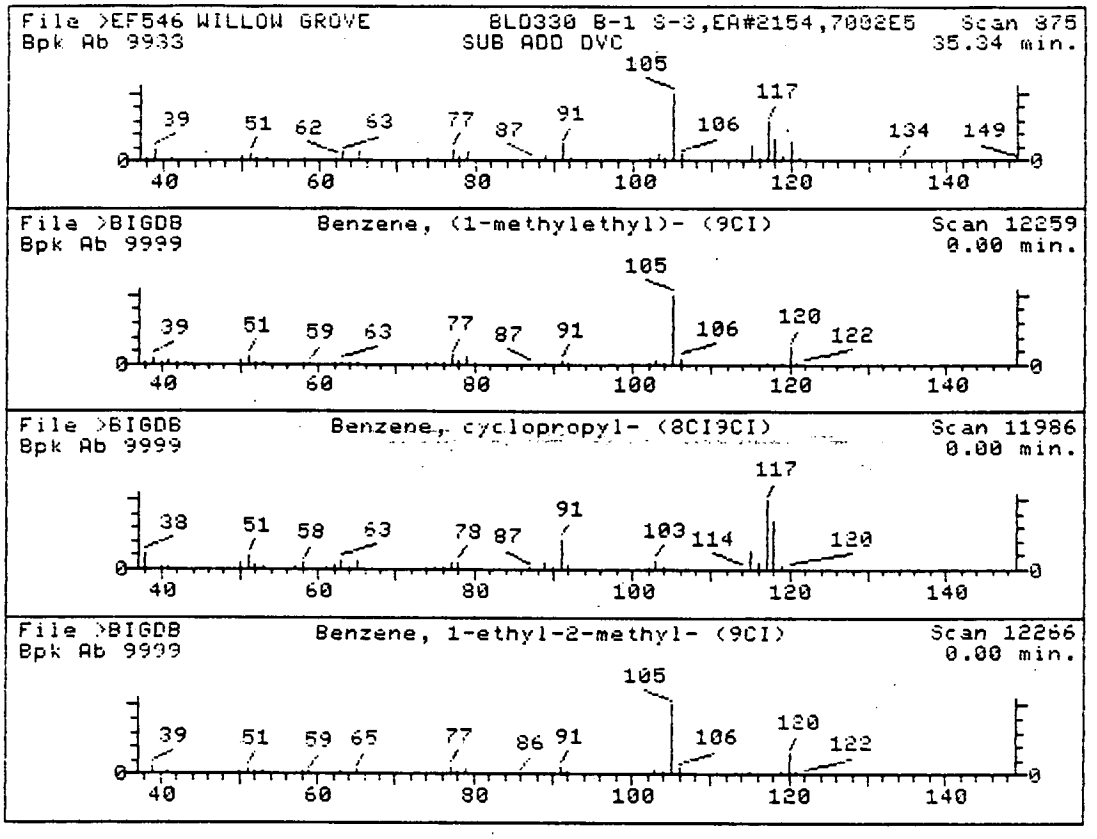
Retention time = 31.92

Area = 878638.0 Tentative Concentration is 140.00

1.	Benzene, propyl- (8CI9CI)	120	C9H12
2.	1,3,5-Cycloheptatriene, 7-ethyl- (8CI9CI)	120	C9H12
3.	Bicyclo[3.2.1]oct-2-ene, 3-methylene- (8CI9CI)	120	C9H12
4.	1,2-Ethanediamine, N-(phenylmethyl)- (9CI)	150	C9H14N2
5.	Ethanol, 2-[(phenylmethyl)amino]- (9CI)	151	C9H13NO
6.	Benzene, ethyl- (8CI9CI)	106	C8H10
7.	Benzene, ethyl-	106	C8H10

Sample file: >EF546 Spectrum #: 787
Search speed: 2 Tilting option: S No. of ion ranges searched: 55

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	79*	103651	12261	"BIGDB	52	33	2	0	100	8	48	35
2.	61*	17634514	12269	"BIGDB	66	35	1	0	61	44	18	66
3.	58*	22819814	7674	"BIGDB	51	53	2	0	67	20	25	25
4.	52	4152094	12287	"BIGDB	39	46	2	0	75	17	20	13
5.	52	104632	12262	"BIGDB	47	32	2	0	100	17	20	16
6.	43	100414	9909	"BIGDB	43	41	2	0	68	25	17	14
7.	42	67	165	PRIPOL	46	36	3	0	100	24	17	13



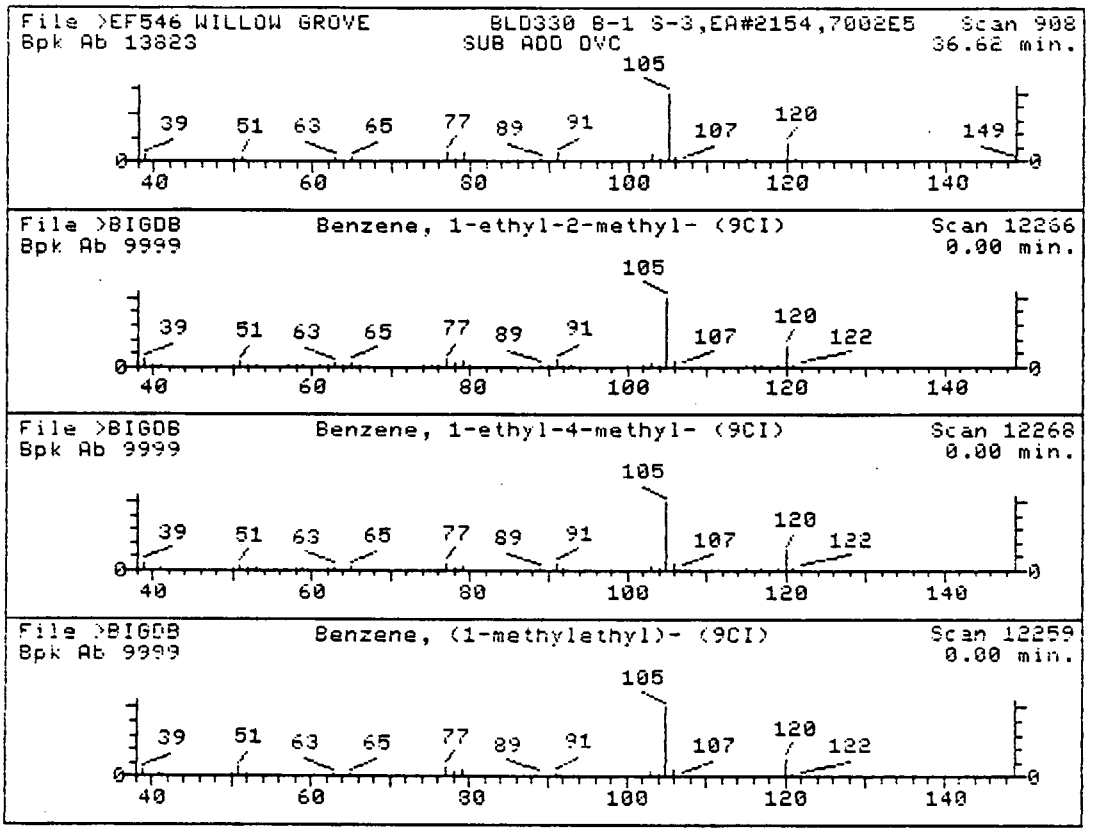
Retention time = 35.34

Area = 1655411. Tentative Concentration is 260.00

1.	Benzene, (1-methylethyl)- (9CI)	120	C9H12
2.	Benzene, cyclopropyl- (8CI9CI)	118	C9H10
3.	Benzene, 1-ethyl-2-methyl- (9CI)	120	C9H12
4.	Benzene, 1-ethyl-3-methyl- (9CI)	120	C9H12
5.	1H-Indene, 2,3-dihydro- (9CI)	118	C9H10
6.	Benzene, 1-ethyl-4-methyl- (9CI)	120	C9H12
7.	Tricyclo[3.2.1.02,4]oct-6-ene, 8-methylene-, (1.alpha.,2.alpha.,4.alpha.,5.alpha.)- (9CI)	118	C9H10

Sample file: >EF546 Spectrum #: 875
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	86*	98828	12259	"BIGDB	71	16	0	0	89	43	43	94
2.	73*	873494	11986	"BIGDB	75	35	1	3	50	24	32	63
3.	62*	611143	12266	"BIGDB	58	27	0	2	100	41	18	67
4.	61*	620144	12267	"BIGDB	59	28	0	3	100	44	18	66
5.	56*	496117	11979	"BIGDB	52	35	2	3	48	25	22	28
6.	55*	622968	12268	"BIGDB	52	33	0	2	100	44	18	60
7.	43*	66929906	11870	"BIGDB	36	18	0	2	63	40	17	32



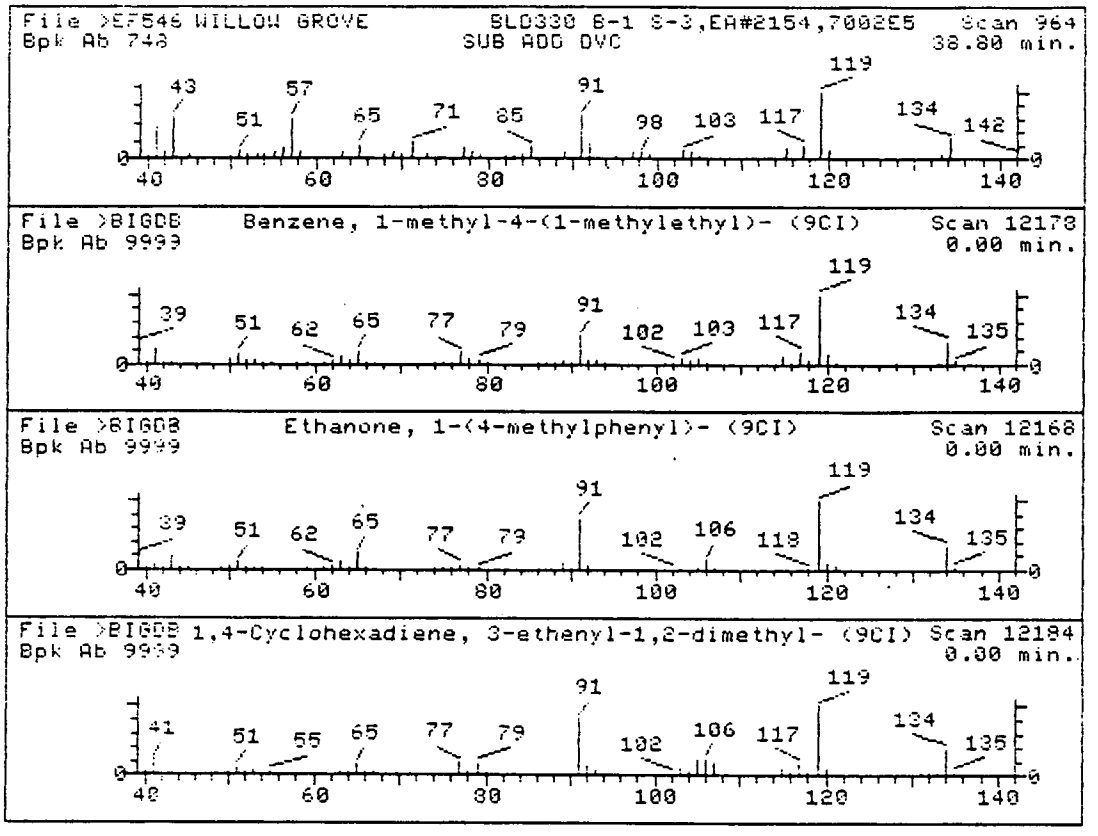
Retention time = 36.62

Area = 1532757. Tentative Concentration is 240.00

1.	Benzene, 1-ethyl-2-methyl- (9CI)	120	C9H12
2.	Benzene, 1-ethyl-4-methyl- (9CI)	120	C9H12
3.	Benzene, (1-methylethyl)- (9CI)	120	C9H12
4.	Benzene, 1-ethyl-3-methyl- (9CI)	120	C9H12
5.	Benzene, 1,2,3-trimethyl- (8CI9CI)	120	C9H12
6.	Benzene, 1,1'-(1-methyl-1,2-ethanediyl)bis- (9CI)	196	C15H16
7.	Benzene, 1,2,4-trimethyl- (8CI9CI)	120	C9H12

Sample file: >EF546 Spectrum #: 908
Search speed: 2 Tilting option: S No. of ion ranges searched: 52

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	94*	611143	12266	"BIGDB	73	12	1	0	90	3	72	92
2.	94*	622968	12268	"BIGDB	73	12	1	0	92	3	72	92
3.	93*	98828	12259	"BIGDB	70	17	1	0	100	5	68	80
4.	81*	620144	12267	"BIGDB	62	25	2	0	84	7	53	49
5.	69*	526738	12280	"BIGDB	66	34	1	0	52	32	26	66
6.	58	5814857	9857	"BIGDB	65	34	2	0	100	16	25	23
7.	45*	95636	12273	"BIGDB	52	43	2	2	53	35	16	28



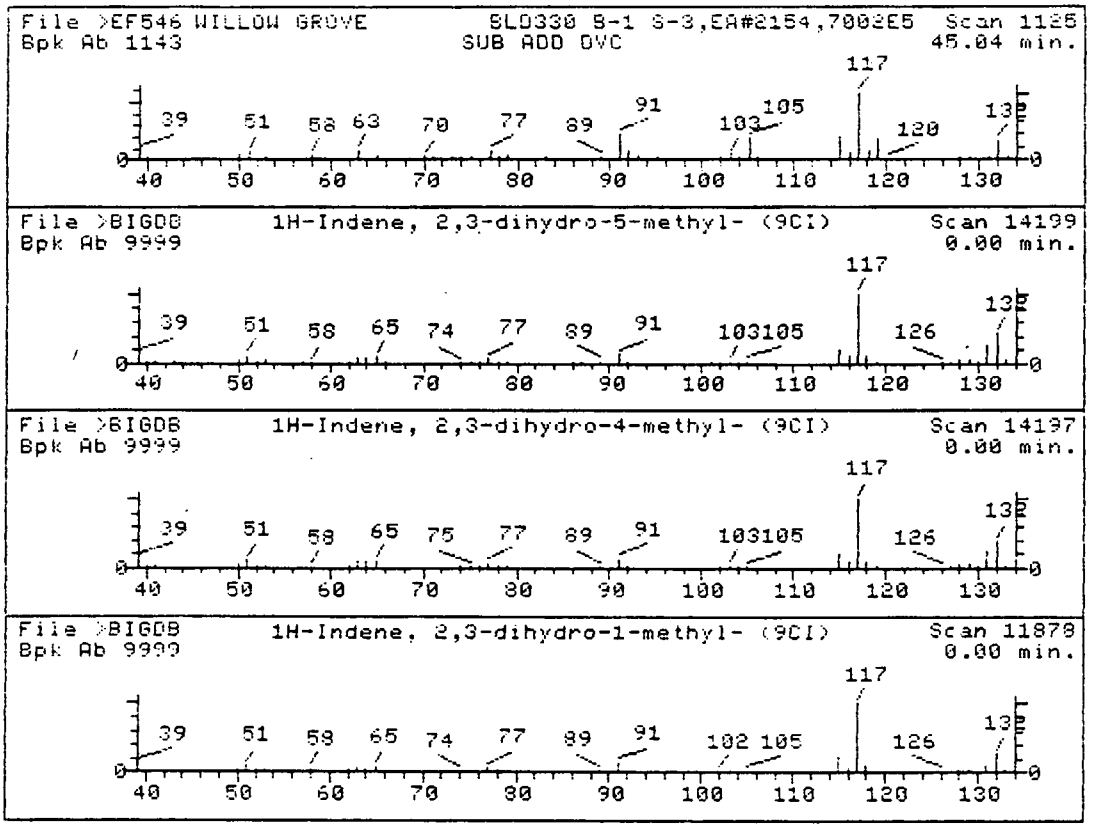
Retention time = 38.80

Area = 268520.0 Tentative Concentration is 42.00

1.	Benzene, 1-methyl-4-(1-methylethyl)- (9CI)	134 C10H14
2.	Ethanone, 1-(4-methylphenyl)- (9CI)	134 C9H10O
3.	1,4-Cyclohexadiene, 3-ethenyl-1,2-dimethyl- (9CI)	134 C10H14
4.	Ethanone, 1-(methylphenyl)- (9CI)	134 C9H10O
5.	Benzene, (1,1-dimethylethyl)- (9CI)	134 C10H14
6.	Benzene, 1,4-diethyl- (9CI)	134 C10H14
7.	1,2,4-Triazolo[4,3-a]pyridine (9CI)	119 C6H5N3

Sampl file: >EF546 Spectrum #: 964
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	86*	99876	12178	"BIGDB	66	39	0	0	90	10	59	78
2.	65*	122009	12168	"BIGDB	60	43	1	0	83	35	24	56
3.	58*	62338572	12184	"BIGDB	51	58	2	0	78	17	25	25
4.	57*	26444199	12182	"BIGDB	43	49	0	0	91	37	19	48
5.	46*	98066	12167	"BIGDB	46	49	1	0	91	34	16	29
6.	45*	105055	14480	"BIGDB	43	57	1	0	78	30	19	23
7.	45*	274806	12132	"BIGDB	59	34	2	-2	78	35	16	28



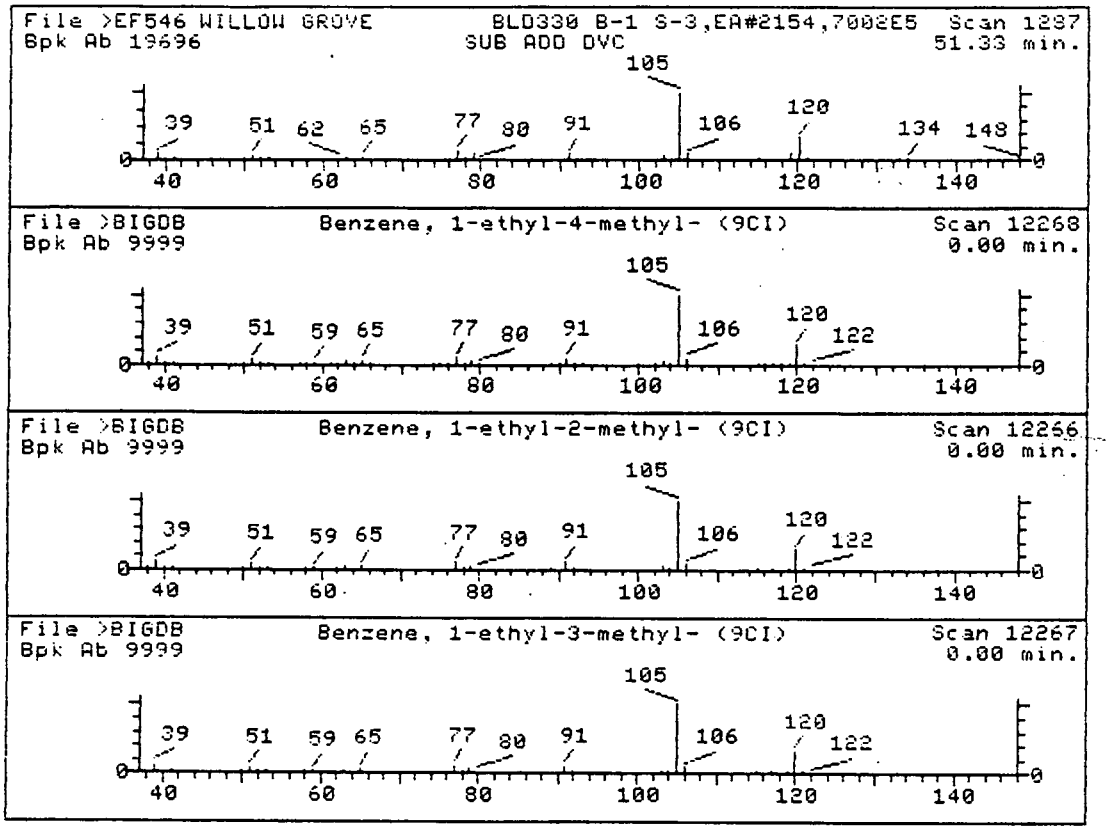
Retention time = 45.04 UNKNOWN

Area = 469802.0 Tentative Concentration is 73.00

1.	1H-Indene, 2,3-dihydro-5-methyl- (9CI)	132	C10H12
2.	1H-Indene, 2,3-dihydro-4-methyl- (9CI)	132	C10H12
3.	1H-Indene, 2,3-dihydro-1-methyl- (9CI)	132	C10H12
4.	1H-Indole (9CI)	117	C8H7N
5.	Benzene, 2-ethenyl-1,4-dimethyl- (9CI)	132	C10H12
6.	Benzene, (isocyanomethyl)- (9CI)	117	C8H7N
7.	Benzene, 1-isocyano-4-methyl- (9CI)	117	C8H7N

Sample file: >EF546 Spectrum #: 1125
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	36*	874351	14199	"BIGDB	50	56	2	0	66	37	14	23
2.	36*	824226	14197	"BIGDB	50	57	2	0	74	39	14	23
3.	36*	767588	11878	"BIGDB	43	54	2	0	100	33	12	19
4.	20*	120729	11859	"BIGDB	26	63	3	0	100	53	5	13
5.	20*	2039896	14205	"BIGDB	27	65	2	0	42	53	5	14
6.	20*	10340917	11866	"BIGDB	35	75	3	0	72	52	5	13
7.	20*	7175475	11754	"BIGDB	28	73	3	0	100	53	5	13



Retention time = 51.33

Area = 4304379. Tentative Concentration is 670.00

1.	Benzene, 1-ethyl-4-methyl- (9CI)	120	C9H12
2.	Benzene, 1-ethyl-2-methyl- (9CI)	120	C9H12
3.	Benzene, 1-ethyl-3-methyl- (9CI)	120	C9H12
4.	Benzene, (1-methylethyl)- (9CI)	120	C9H12
5.	Benzene, 1,2,4-trimethyl- (8CI9CI)	120	C9H12
6.	Benzene, 1,2,3-trimethyl- (8CI9CI)	120	C9H12
7.	Benzene, 1,3,5-trimethyl- (9CI)	120	C9H12

Sample file: >EF546 Spectrum #: 1287
Search speed: 2 Tilting option: S No. of ion ranges searched: 52

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C_I	R_IV
1.	93*	622968	12268	"BIGDB	74	11	1	0	98	8	68	92
2.	93*	611143	12266	"BIGDB	73	12	1	0	83	8	68	92
3.	84*	620144	12267	"BIGDB	68	19	2	0	85	8	55	60
4.	81*	98828	12259	"BIGDB	60	27	2	0	100	8	53	46
5.	71*	95636	12273	"BIGDB	66	29	1	0	55	30	29	66
6.	71*	526738	12280	"BIGDB	67	33	1	0	51	28	29	66
7.	58*	108678	12275	"BIGDB	63	25	2	1	56	32	22	43

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

B2S1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA#2156

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF530

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 16. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	6.	U
67-64-1	Acetone	31.	
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene	6.	U
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene	6.	U
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene	6.	U
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene	6.	U
108-90-7	Chlorobenz ne	6.	U
100-41-4	Ethylbenzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

B2S1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: EA # 2156

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF530

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 16. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	None found			
2.				
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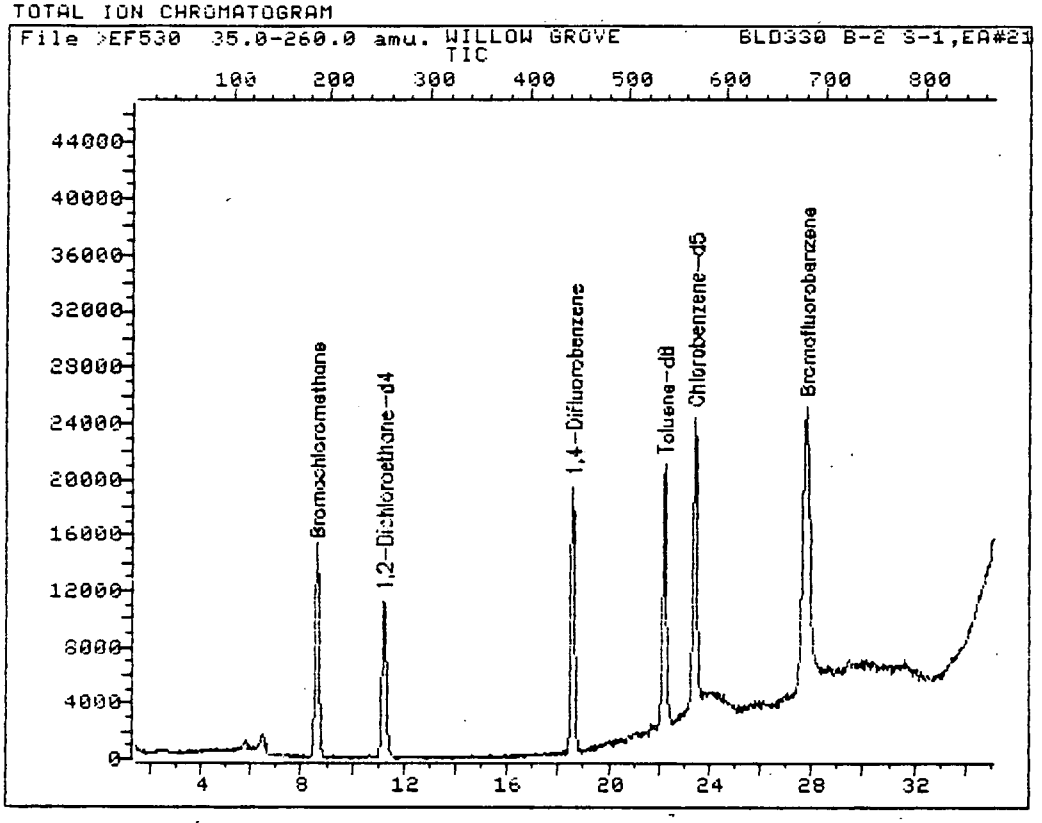
TOTAL ION CHROMATOGRAM



Data File: >EF530::D2 Quant Output File: ^EF530::QT
Name: WILLOW GROVE
Misc: BLD330 B-2 S-1,EA#2156,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890511 06:55
Injected at: 890509 21:46

QUANT REPORT

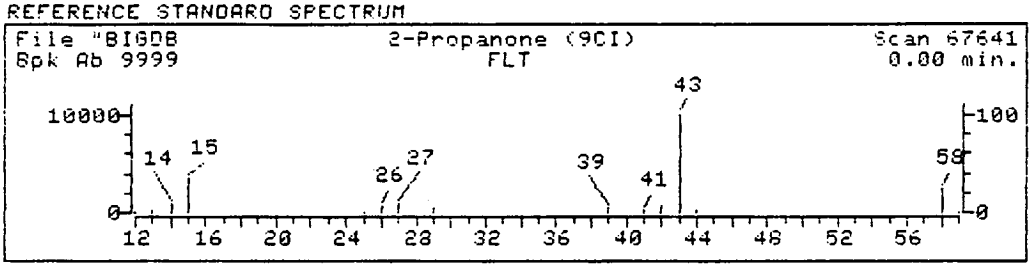
Operator ID: CARL Quant Rev: 6 Quant Time: 890511 06:55
Output File: ^EF530::QT Injected at: 890509 21:46
Data File: >EF530::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: BLD330 B-2 S-1,EA#2156,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

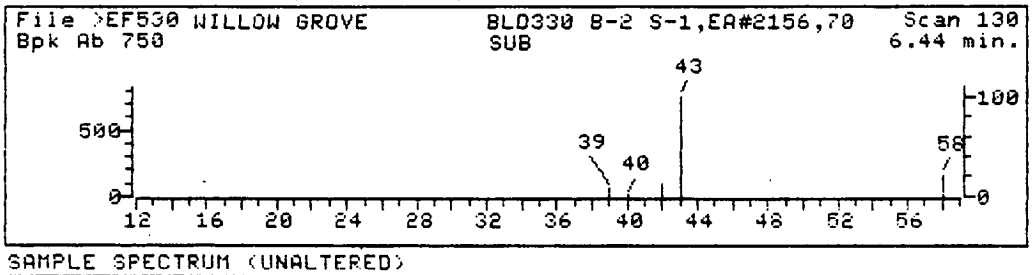
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.62	128.0	21330	50.00	UG/KG	92
7)	Acetone	6.44	43.0	7185	26.42	UG/KG	92
13)	1,2-Dichloroethane-d4	11.21	65.0	45140	50.75	UG/KG	83
15)	*1,4-Difluorobenzene	18.58	114.0	77883	50.00	UG/KG	91
29)	*Chlorobenzene-d5	23.43	117.0	71905	50.00	UG/KG	94
35)	Toluene-d8	22.23	98.0	73798	48.06	UG/KG	98
40)	Bromofluorobenzene	27.78	95.0	68381	46.11	UG/KG	89

* Compound is ISTD

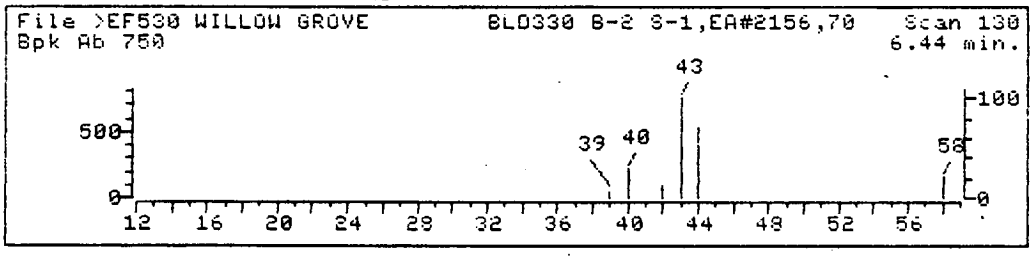
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EF530::D2 Quant Output File: ^EF530::QT
Name: WILLOW GROVE
Misc: BLD330 B-2 S-1,EA#2156,7002E5,SOIL,5.0GM
Quant Time: 890511 06:55 Quant ID File: EVOAS::BD
Injected at: 890509 21:46 Last Calibration: 890509 13:58

Compound No: 7
Compound Name: Acetone
Scan Number: 130
Retention Time: 6.44 min.
Quant Ion: 43.0
Area: 7185
Concentration: 26.42 UG/KG
q-value: 92

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSE#1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) WATER Lab Sample ID: EA # 2098

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF506

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 100. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styr ne	5.	U
1330-20-7	Xylene (total)	5.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSE#1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) WATER Lab Sample ID: EA#2098

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF506

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 100. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		None found			
2.					
3.					
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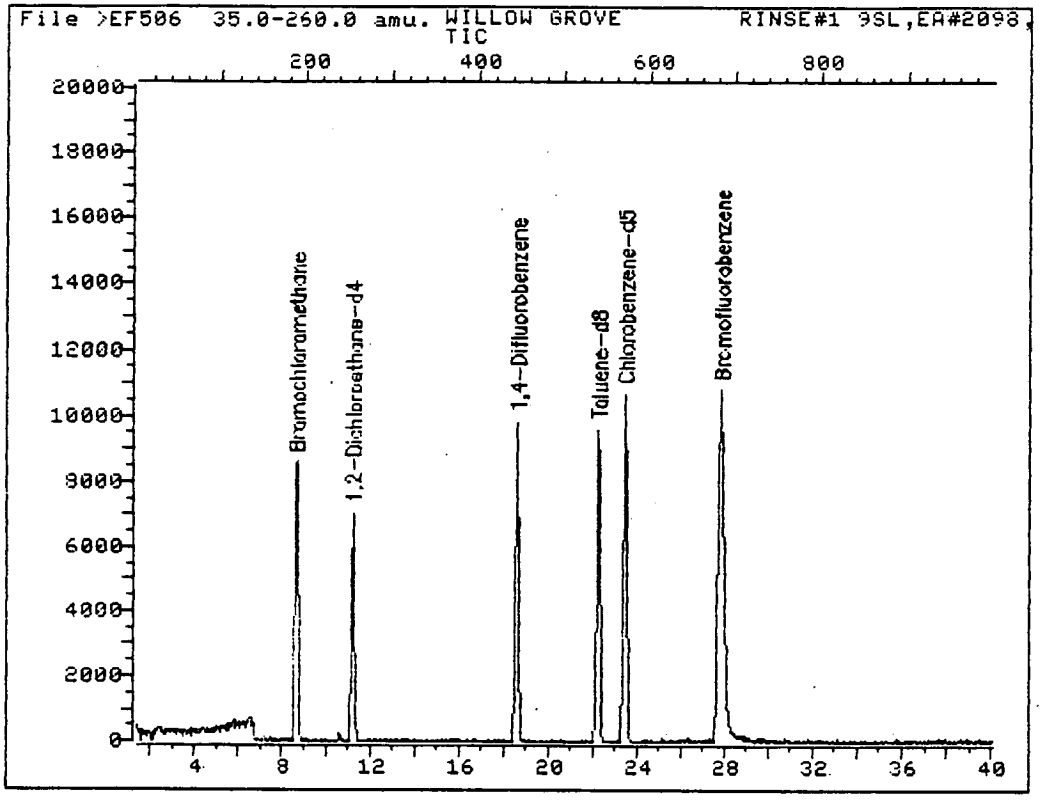
TOTAL ION CHROMATOGRAM



Data File: >EF506::D2 Quant Output File: ^EF506::QT
Name: WILLOW GROVE
Misc: RINSE#1 9SL,EA#2098,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:37

Operator ID: CARL
Quant Time: 890508 13:20
Injected at: 890508 12:39

QUANT REPORT

Operator ID: CARL
Output File: ^EF506::QT
Data File: >EF506::D2
Name: WILLOW GROVE
Misc: RINSE#1 9SL,EA#2098,7002E5,WATER,5.0ML

Quant Rev: 6
Quant Time: 890508 13:20
Injected at: 890508 12:39
Dilution Factor: 1.00000

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	11403	50.00	UG/L	98
13)	1,2-Dichloroethane-d4	11.24	65.0	31539	57.10	UG/L	77
15)	*1,4-Difluorobenzene	18.61	114.0	36682	50.00	UG/L	94
29)	*Chlorobenzene-d5	23.45	117.0	34291	50.00	UG/L	94
35)	Toluene-d8	22.25	98.0	37543	48.37	UG/L	97
40)	Bromofluorobenzene	27.83	95.0	37465	55.16	UG/L	90

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSE#2

Lab Nam : EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) WATER Lab Sample ID: EA # 2099

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF507

L v l: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 100. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSE#2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) WATER Lab Sample ID: EA #2099

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF507

L vel: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 100. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	None found			
2.				
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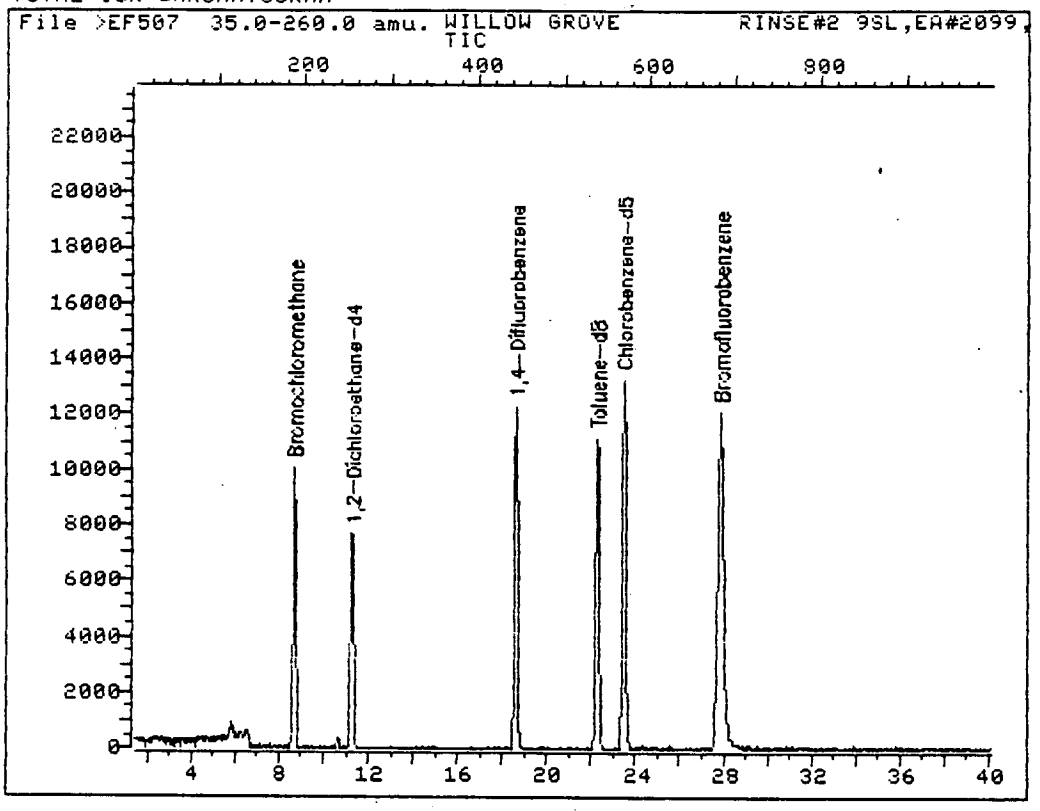
TOTAL ION CHROMATOGRAM



Data File: >EF507::D2 Quant Output File: ^EF507::QT
Name: WILLOW GROVE
Misc: RINSE#2 9SL,EA#2099,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:37

Operator ID: CARL
Quant Time: 890508 14:07
Injected at: 890508 13:25

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890508 14:07
Output File: ^EF507::QT Injected at: 890508 13:25
Data File: >EF507::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: RINSE#2 9SL,EA#2099,7002E5,WATER,5.0ML

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.70	128.0	12834	50.00	UG/L	96
13)	1,2-Dichloroethane-d4	11.30	65.0	35236M	56.68	UG/L	77
15)	*1,4-Difluorobenzene	18.63	114.0	46506	50.00	UG/L	90
29)	*Chlorobenzene-d5	23.47	117.0	43475	50.00	UG/L	97
35)	Toluene-d8	22.27	98.0	44930	45.65	UG/L	99
40)	Bromofluorobenzene	27.85	95.0	42270	49.09	UG/L	89

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSE1 FTA

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) WATER Lab Sample ID: EA# 2158

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF547

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 100. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylb nzen	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylen (total)	5.	U

FORM I VOA 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSE #1 FTA

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) WATER Lab Sample ID: EA# 2158

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF547

Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 100. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	None found			
2.				
3.				
4.				
5.				
6.				
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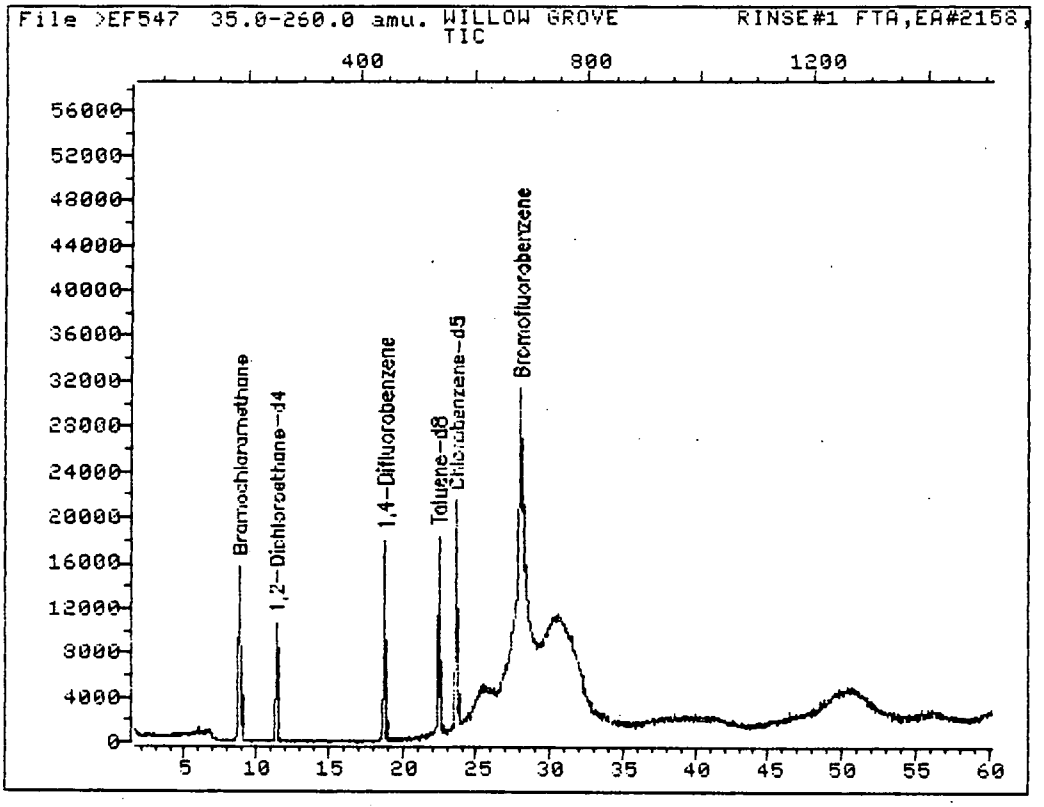
TOTAL ION CHROMATOGRAM



Data File: >EF547::D2 Quant Output File: ^EF547::QT
Name: WILLOW GROVE
Misc: RINSE#1 FTA,EA#2158,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 12:53
Injected at: 890511 11:52

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890511 12:53
Output File: ^EF547::QT Injected at: 890511 11:52
Data File: >EF547::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: RINSE#1 FTA,EA#2158,7002E5,WATER,5.0ML

ID File: EVOA::8D
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.77	128.0	20877	50.00	UG/L	97
13)	1,2-Dichloroethane-d4	11.37	65.0	43016	50.39	UG/L	84
15)	*1,4-Difluorobenzene	18.74	114.0	73953	50.00	UG/L	90
29)	*Chlorobenzene-d5	23.62	117.0	68271	50.00	UG/L	94
35)	Toluene-d8	22.38	98.0	70345	48.41	UG/L	97
40)	Bromofluorobenzene	27.97	95.0	71463	49.65	UG/L	86

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

SCE9SL1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) WATER Lab Sample ID: EA# 2101

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF520

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 100. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	2.	J
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	4.	J
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	7.	
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

SCE9SL1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) WATER Lab Sample ID: EA# 2101

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF520

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 100. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	None found			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
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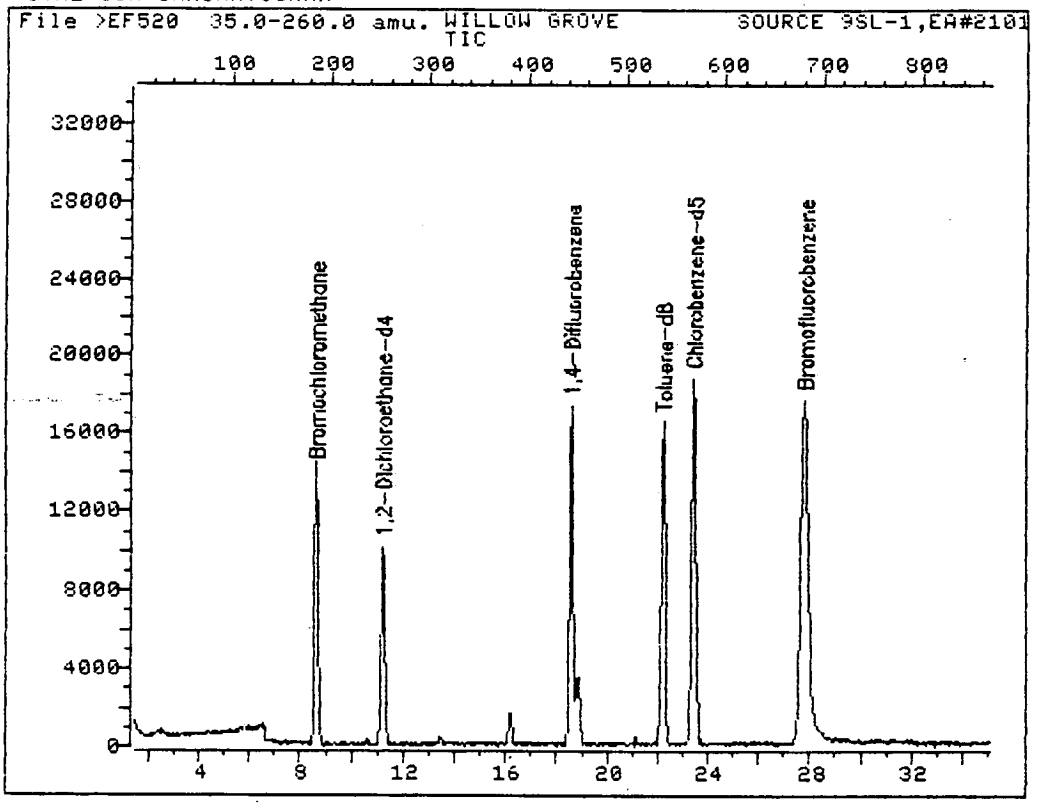
29.				
30.				

TOTAL ION CHROMATOGRAM



Data File: >EF520::D2 Quant Output File: ^EF520::QT
Name: WILLOW GROVE
Misc: SOURCE 9SL-1,EA#2101,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:57

Operator ID: CARL
Quant Time: 890509 15:37
Injected at: 890509 15:01

QUANT REPORT

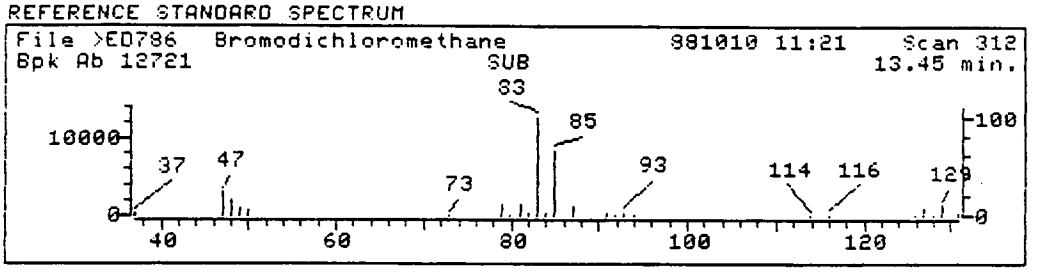
Operator ID: CARL Quant Rev: 6 Quant Time: 890509 15:37
Output File: ^EF520::QT Injected at: 890509 15:01
Data File: >EF520::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: SOURCE 9SL-1,EA#2101,7002E5,WATER,5.0ML

ID Fil : EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:57

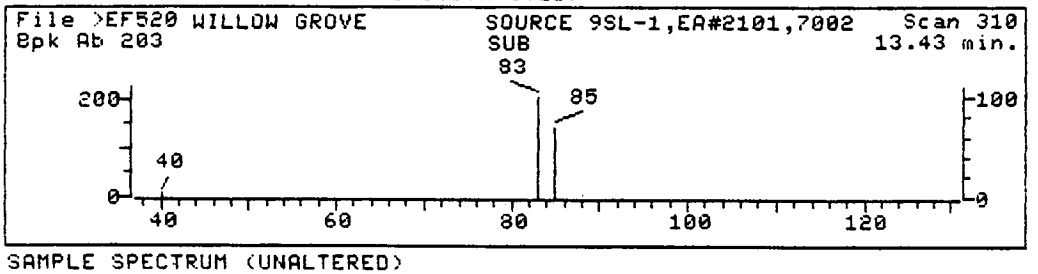
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.62	128.0	19360	50.00	UG/L	93
13)	1,2-Dichloroethane-d4	11.22	65.0	43098	53.38	UG/L	84
15)	*1,4-Difluorobenzene	18.59	114.0	69523	50.00	UG/L	91
20)	Bromodichloromethane	13.43	83.0	1968	1.54	UG/L	99
24)	Dibromochloromethane	16.18	129.0	5728	4.38	UG/L	91
28)	Bromoform	18.86	173.0	10540	7.44	UG/L	97
29)	*Chlorobenzene-d5	23.43	117.0	61147	50.00	UG/L	98
35)	Toluene-d8	22.23	98.0	65027	49.80	UG/L	97
40)	Bromofluorobenzene	27.82	95.0	62104	49.25	UG/L	86

* Compound is ISTD

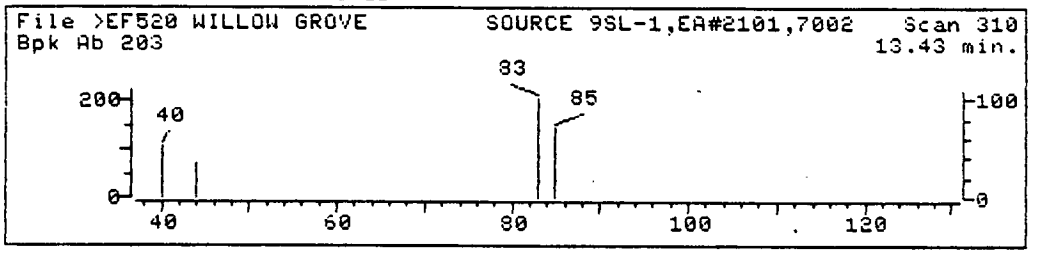
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



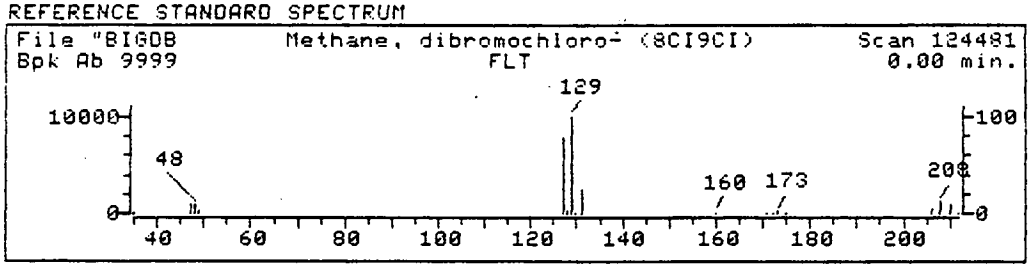
SAMPLE SPECTRUM (UNALTERED)



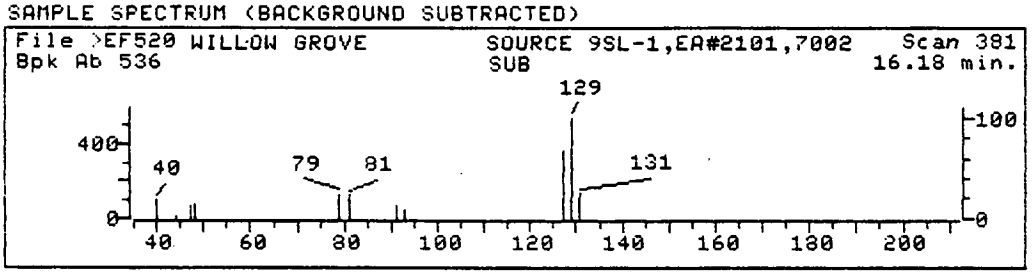
Data File: >EF520::D2 Quant Output File: ^EF520::QT
Name: WILLOW GROVE
Misc: SOURCE 9SL-1,EA#2101,7002E5,WATER,5.0ML
Quant Time: 890509 15:37 Quant ID File: EVOA::BD
Injected at: 890509 15:01 Last Calibration: 890509 13:57

Compound No: 20
Compound Name: Bromodichloromethane
Scan Number: 310
Retention Time: 13.43 min.
Quant Ion: 83.0
Area: 1968
Concentration: 1.54 UG/L
q-value: 99

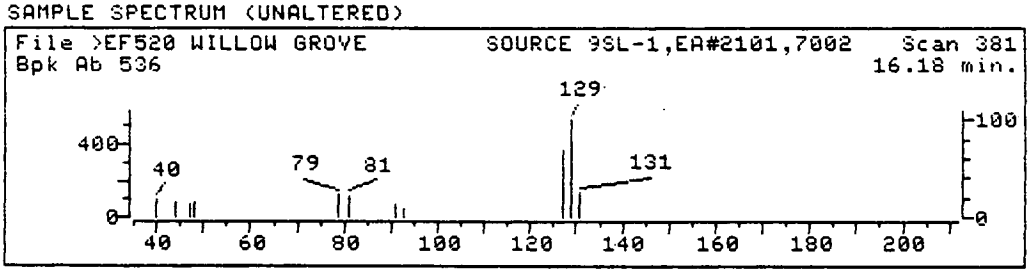
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



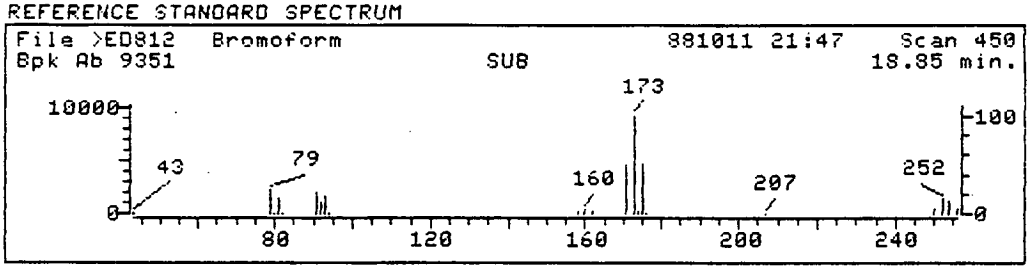
SAMPLE SPECTRUM (UNALTERED)



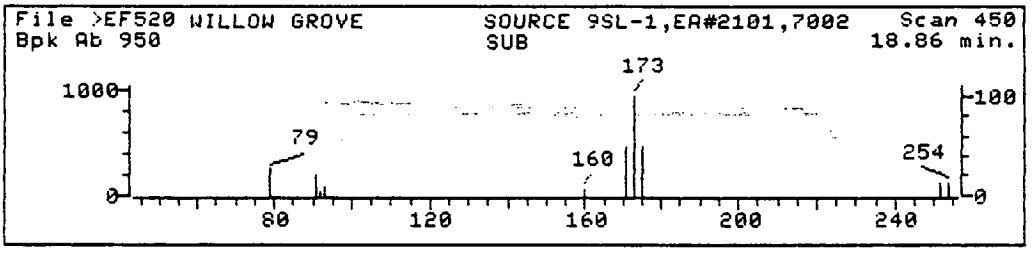
Data File: >EF520::D2 Quant Output File: ^EF520::QT
Name: WILLOW GROVE
Misc: SOURCE 9SL-1,EA#2101,7002E5,WATER,5.0ML
Quant Time: 890509 15:37 Quant ID File: EVOA::BD
Injected at: 890509 15:01 Last Calibration: 890509 13:57

Compound No: 24
Compound Name: Dibromochloromethane
Scan Number: 381
Retention Time: 16.18 min.
Quant Ion: 129.0
Area: 5728
Concentration: 4.38 UG/L
q-value: 91

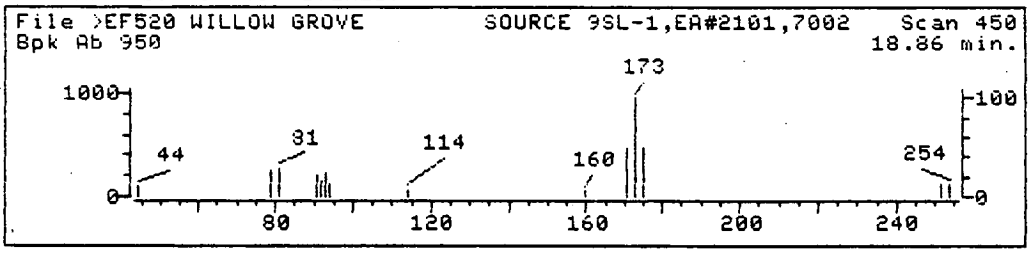
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EF520::D2 Quant Output File: ^EF520::QT
Name: WILLOW GROVE
Misc: SOURCE 9SL-1,EA#2101,7002E5,WATER,5.0ML
Quant Time: 890509 15:37 Quant ID File: EVOA::BD
Injected at: 890509 15:01 Last Calibration: 890509 13:57

Compound No: 28
Compound Name: Bromoform
Scan Number: 450
Retention Time: 18.86 min.
Quant Ion: 173.0
Area: 10540
Concentration: 7.44 UG/L
q-value: 97

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLW2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) WATER Lab Sample ID: EA# 2160

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF549

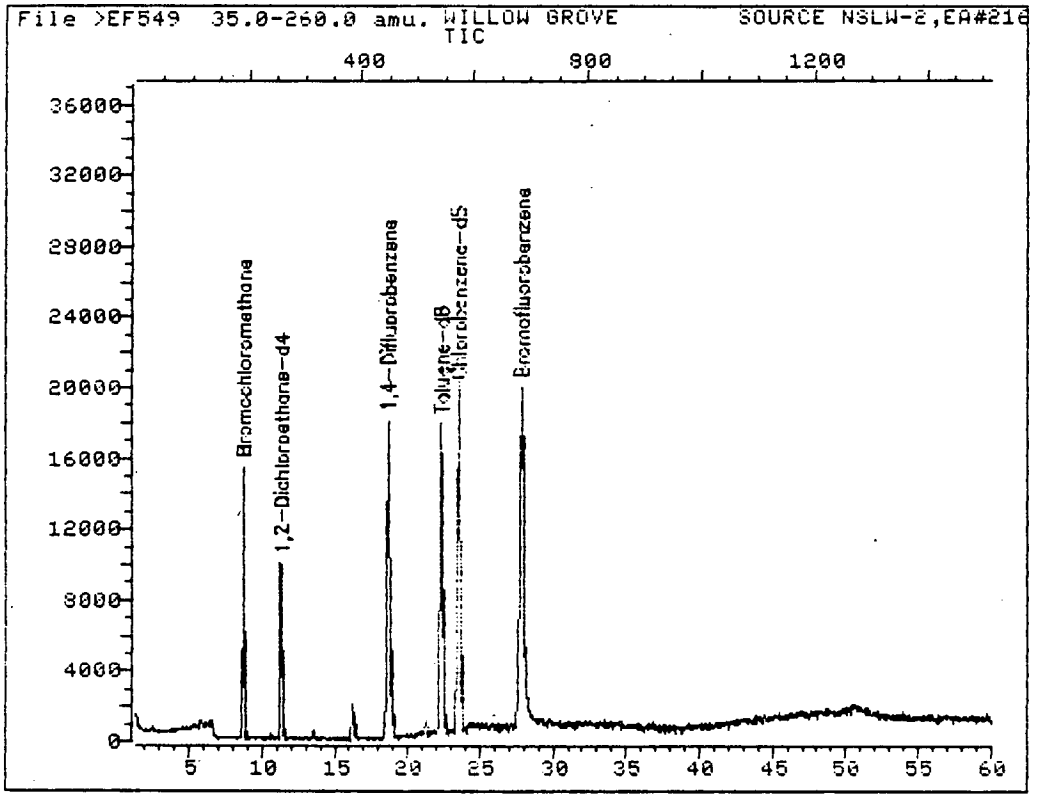
Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 100. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	1.	J
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	2.	J
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	9.	
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	1.	J
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylb nzen	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

TOTAL ION CHROMATOGRAM



Data File: >EF549::D2 Quant Output File: ^EF549::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-2,EA#2160,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 15:05
Injected at: 890511 14:04

QUANT REPORT

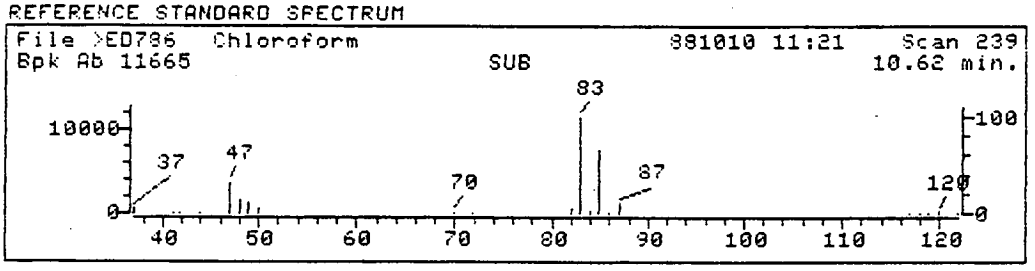
Operator ID: CARL Quant Rev: 6 Quant Time: 890511 15:05
Output File: ^EF549::QT Injected at: 890511 14:04
Data File: >EF549::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: SOURCE NSLW-2,EA#2160,7002E5,WATER,5.0ML

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

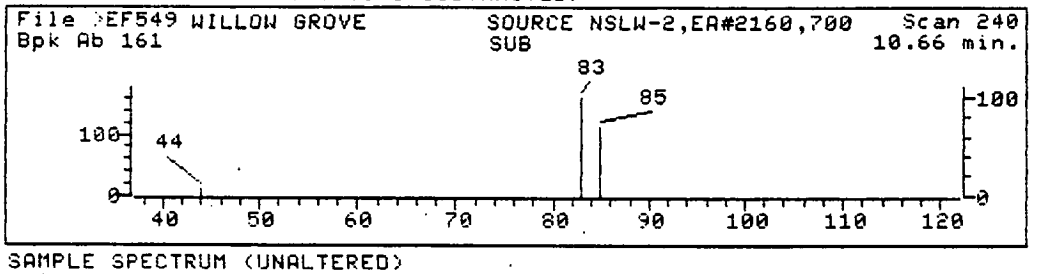
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.68	128.0	20596	50.00	UG/L	89
12)	Chloroform	10.66	83.0	1258	1.08	UG/L	99
13)	1,2-Dichloroethane-d4	11.28	65.0	42890	50.93	UG/L	82
15)	*1,4-Difluorobenzene	18.61	114.0	73623	50.00	UG/L	91
20)	Bromodichloromethane	13.49	83.0	2538	2.01	UG/L	96
24)	Dibromochloromethane	16.24	129.0	6852	5.41	UG/L	97
28)	Bromoform	18.88	173.0	11406	8.77	UG/L	97
29)	*Chlorobenzene-d5	23.49	117.0	64916	50.00	UG/L	96
32)	Tetrachloroethene	21.24	164.0	891	1.29	UG/L	81
35)	Toluene-d8	22.29	98.0	70066	50.71	UG/L	99
40)	Bromofluorobenzene	27.84	95.0	70574	51.57	UG/L	79

* Compound is ISTD

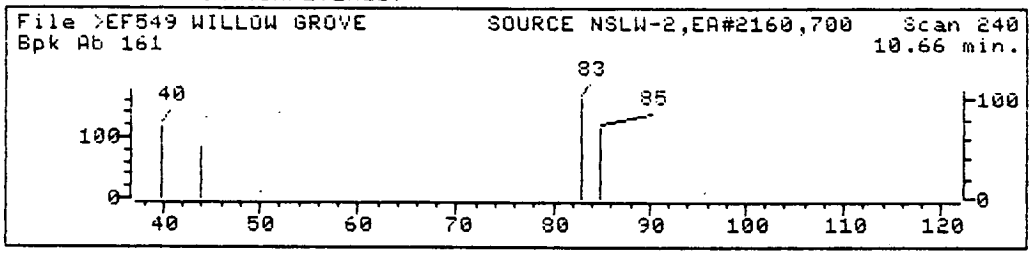
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



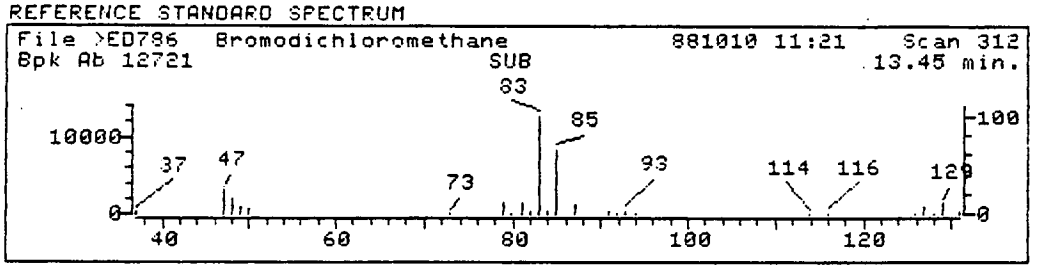
SAMPLE SPECTRUM (UNALTERED)



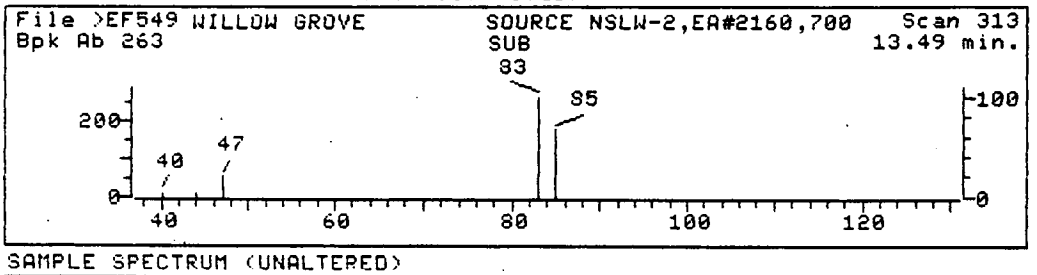
Data File: >EF549::D2 Quant Output File: ^EF549::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-2,EA#2160,7002E5,WATER,5.0ML
Quant Time: 890511 15:05 Quant ID File: EVOA::BD
Injected at: 890511 14:04 Last Calibration: 890511 08:55

Compound No: 12
Compound Name: Chloroform
Scan Number: 240
Retention Time: 10.66 min.
Quant Ion: 83.0
Area: 1258
Concentration: 1.08 UG/L
q-value: 99

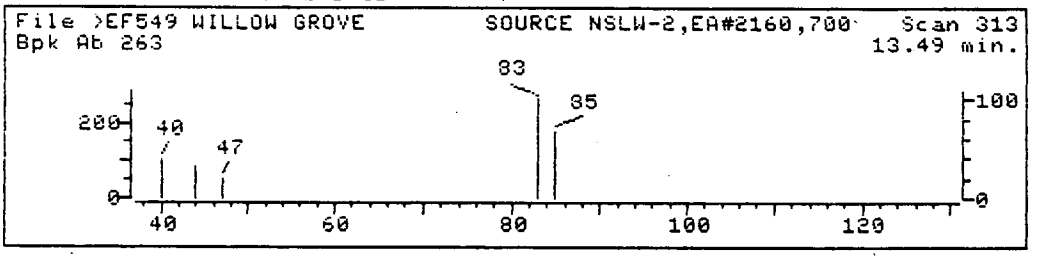
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



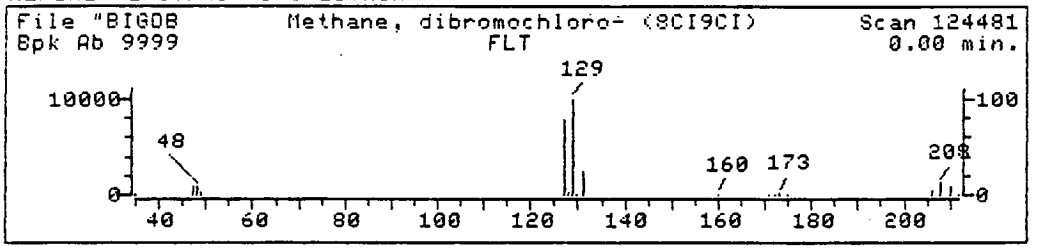
SAMPLE SPECTRUM (UNALTERED)



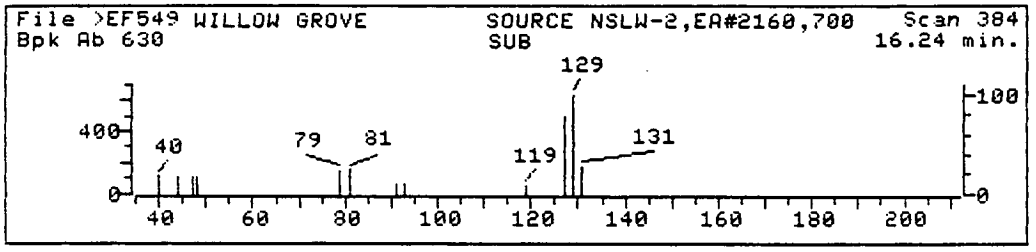
Data File: >EF549::D2 Quant Output File: ^EF549::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-2,EA#2160,7002E5,WATER,5.0ML
Quant Time: 890511 15:05 Quant ID File: EVOA::BD
Injected at: 890511 14:04 Last Calibration: 890511 08:55

Compound No: 20
Compound Name: Bromodichloromethane
Scan Number: 313
Retention Time: 13.49 min.
Quant Ion: 83.0
Area: 2538
Concentration: 2.01 UG/L
q-value: 96

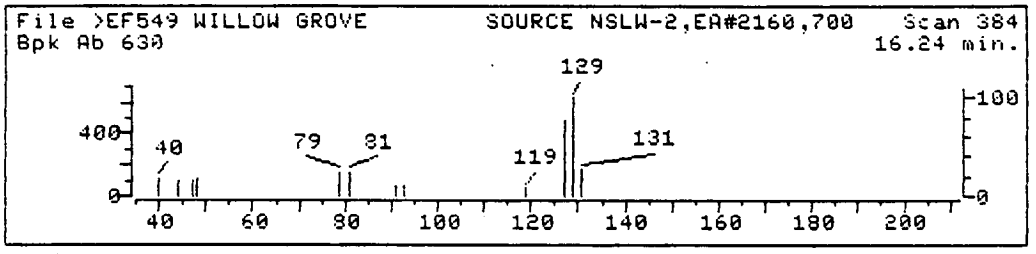
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



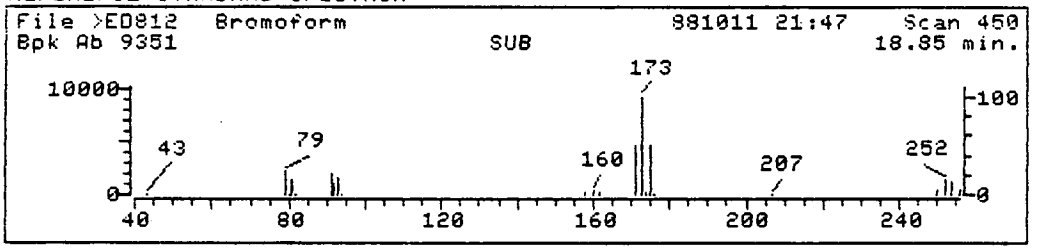
SAMPLE SPECTRUM (UNALTERED)



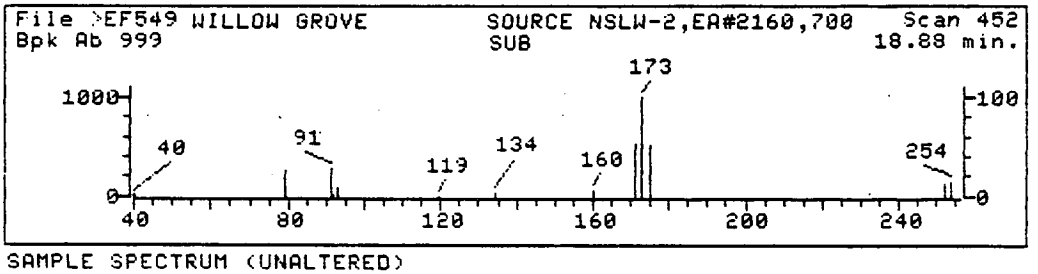
Data File: >EF549::D2 Quant Output File: ^EF549::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-2,EA#2160,7002E5,WATER,5.0ML
Quant Time: 890511 15:05 Quant ID File: EVOA::BD
Injected at: 890511 14:04 Last Calibration: 890511 08:55

Compound No: 24
Compound Name: Dibromochloromethane
Scan Number: 384
Retention Time: 16.24 min.
Quant Ion: 129.0
Area: 6852
Concentration: 5.41 UG/L
q-value: 97

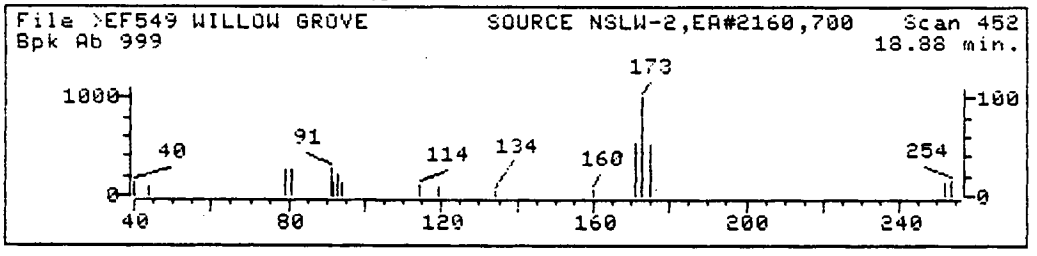
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



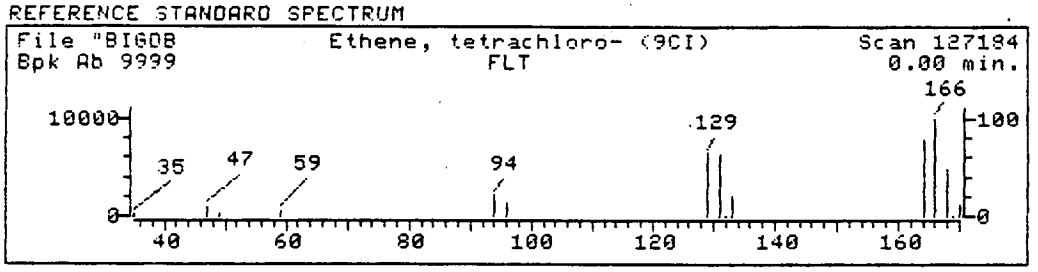
SAMPLE SPECTRUM (UNALTERED)



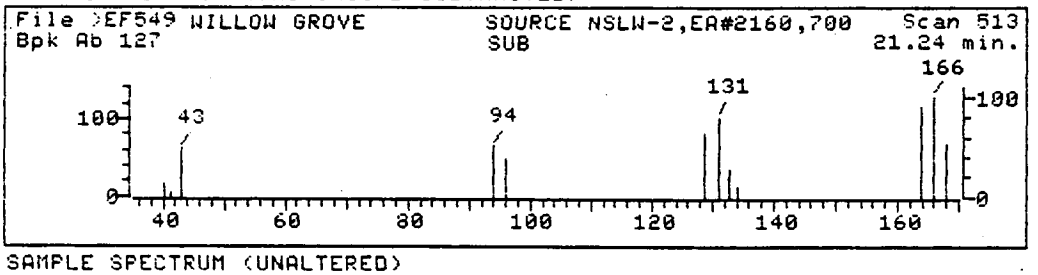
Data File: >EF549::D2 Quant Output File: ^EF549::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-2,EA#2160,7002E5,WATER,5.0ML
Quant Time: 890511 15:05 Quant ID File: EVOA::BD
Injected at: 890511 14:04 Last Calibration: 890511 08:55

Compound No: 28
Compound Name: Bromoform
Scan Number: 452
Retention Time: 18.88 min.
Quant Ion: 173.0
Area: 11406
Concentration: 8.77 UG/L
q-value: 97

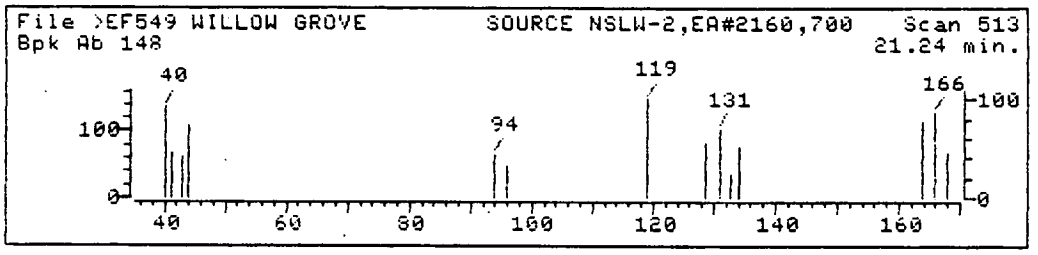
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EF549::D2 Quant Output File: ^EF549::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-2,EA#2160,7002E5,WATER,5.0ML
Quant Time: 890511 15:05 Quant ID File: EVOA::BD
Injected at: 890511 14:04 Last Calibration: 890511 08:55

Compound No: 32
Compound Name: Tetrachloroethene
Scan Number: 513
Retention Time: 21.24 min.
Quant Ion: 164.0
Area: 891
Concentration: 1.29 UG/L
q-value: 81

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLW3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) WATER Lab Sample ID: EA# 2205

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF550

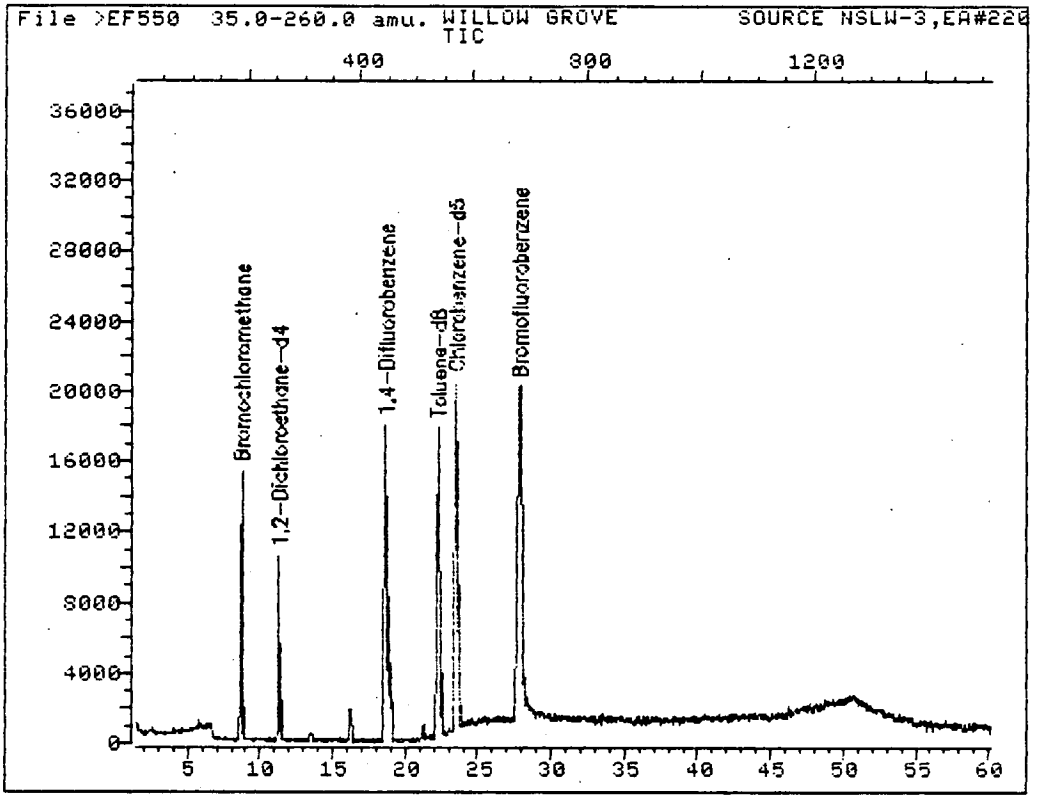
Level: (low/med) LOW Date Received: 5/ 8/89

% Moisture: not dec. 100. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	2.	J
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	10.	
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	1.	J
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylb nz n	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

TOTAL ION CHROMATOGRAM



Data File: >EF550::D2 Quant Output File: ^EF550::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-3,EA#2205,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 16:11
Injected at: 890511 15:10

QUANT REPORT

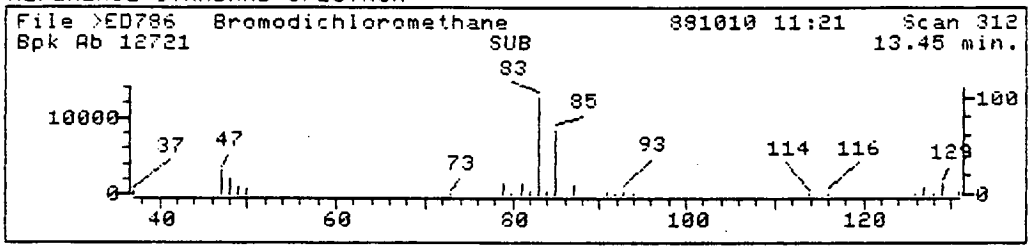
Operator ID: CARL Quant Rev: 6 Quant Time: 890511 16:11
Output File: ^EF550::QT Injected at: 890511 15:10
Data File: >EF550::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: SOURCE NSLW-3,EA#2205,7002E5,WATER,5.0ML

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

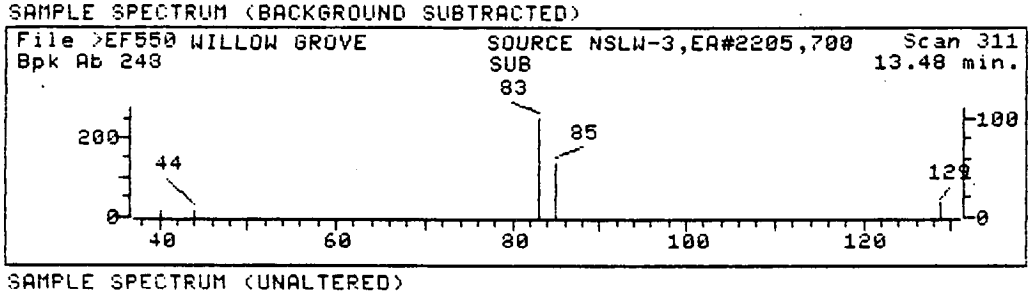
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.67	128.0	20729	50.00	UG/L	97
13)	1,2-Dichloroethane-d4	11.27	65.0	42517	50.17	UG/L	84
15)	*1,4-Difluorobenzene	18.63	114.0	75524	50.00	UG/L	89
20)	Bromodichloromethane	13.48	83.0	2359	1.82	UG/L	82
24)	Dibromochloromethane	16.23	129.0	6927	5.33	UG/L	96
28)	Bromoform	18.91	173.0	13137	9.85	UG/L	94
29)	*Chlorobenzene-d5	23.52	117.0	66615	50.00	UG/L	95
32)	Tetrachloroethene	21.19	164.0	933	1.32	UG/L	99
35)	Toluene-d8	22.28	98.0	71234	50.24	UG/L	98
40)	Bromofluorobenzene	27.83	95.0	70719	50.35	UG/L	82

* Compound is ISTD

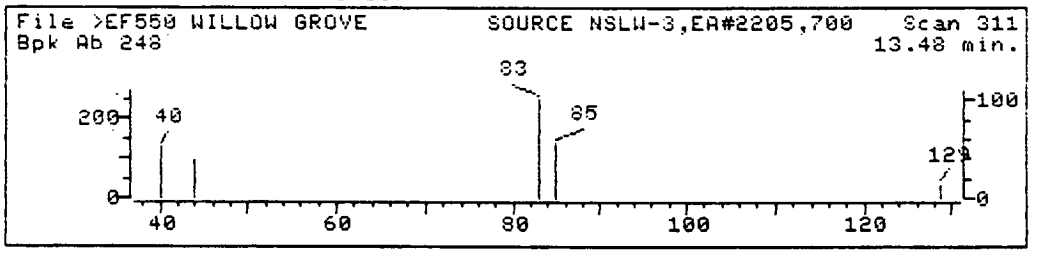
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



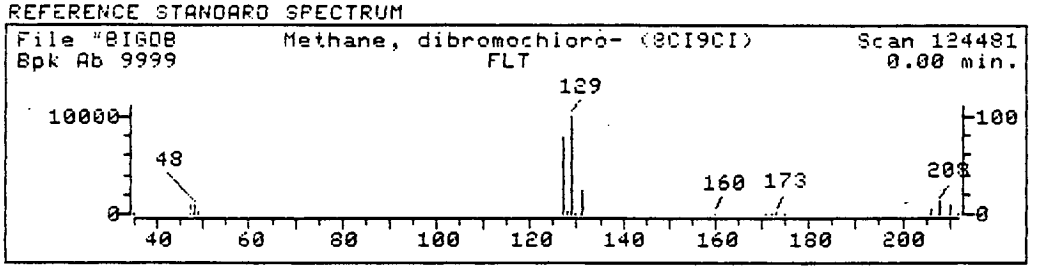
SAMPLE SPECTRUM (UNALTERED)



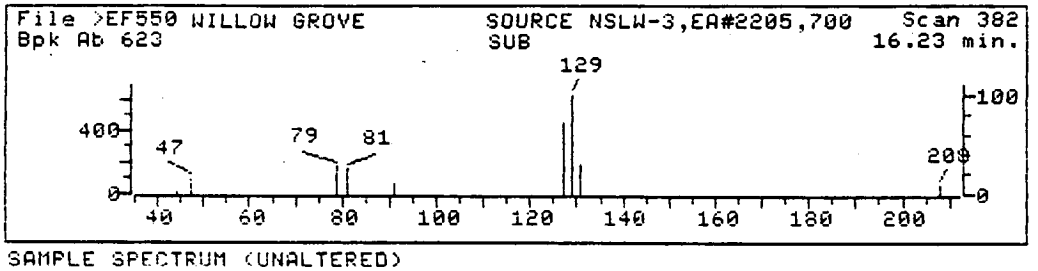
Data File: >EF550::D2 Quant Output File: ^EF550::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-3,EA#2205,7002E5,WATER,5.0ML
Quant Time: 890511 16:11 Quant ID File: EVOA::BD
Injected at: 890511 15:10 Last Calibration: 890511 08:55

Compound No: 20
Compound Name: Bromodichloromethane
Scan Number: 311
Retention Time: 13.48 min.
Quant Ion: 83.0
Area: 2359
Concentration: 1.82 UG/L
q-value: 82

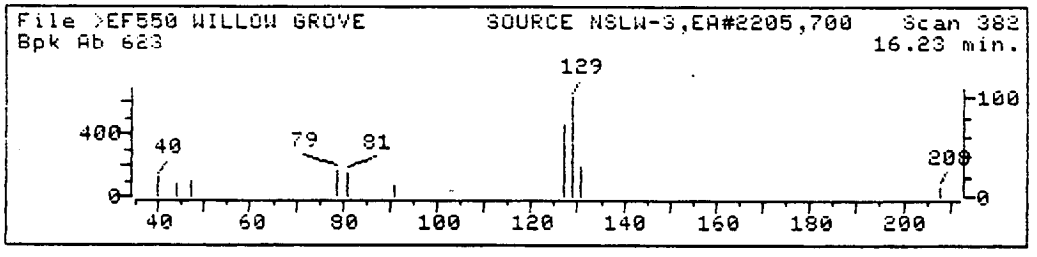
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



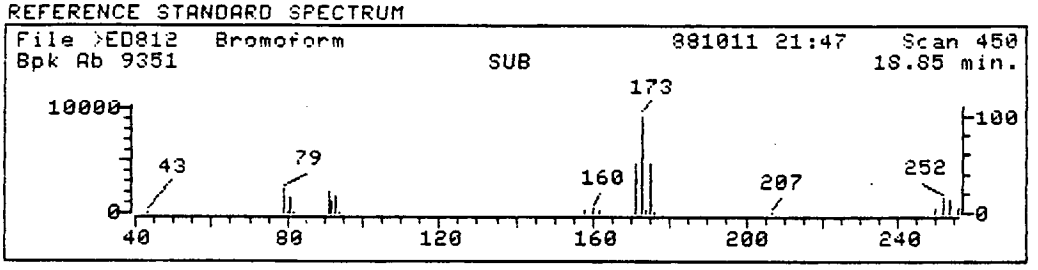
SAMPLE SPECTRUM (UNALTERED)



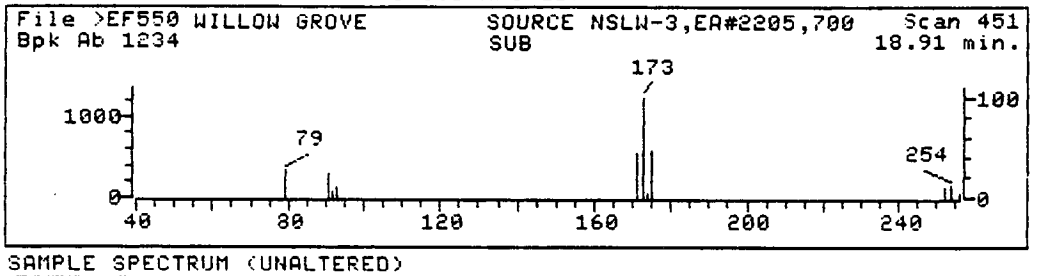
Data File: >EF550::D2 Quant Output File: ^EF550::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-3,EA#2205,7002E5,WATER,5.0ML
Quant Time: 890511 16:11 Quant ID File: EVOA::BD
Injected at: 890511 15:10 Last Calibration: 890511 08:55

Compound No: 24
Compound Name: Dibromochloromethane
Scan Number: 382
Retention Time: 16.23 min.
Quant Ion: 129.0
Area: 6927
Concentration: 5.33 UG/L
q-value: 96

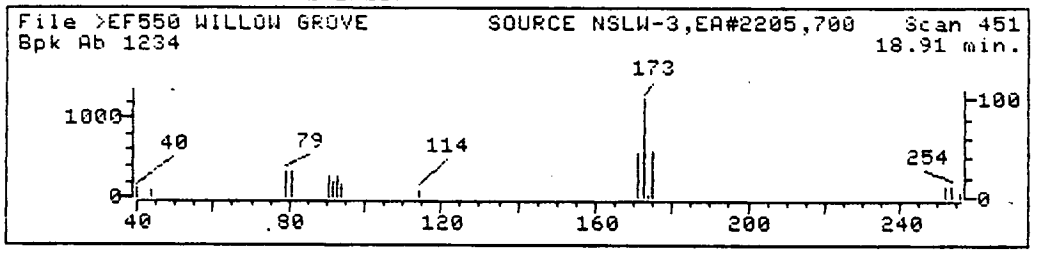
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



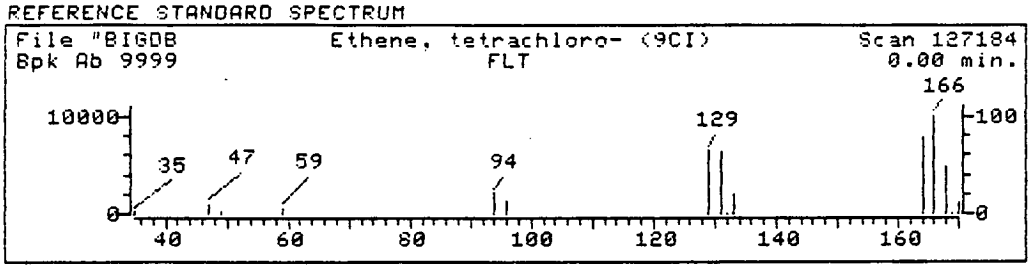
SAMPLE SPECTRUM (UNALTERED)



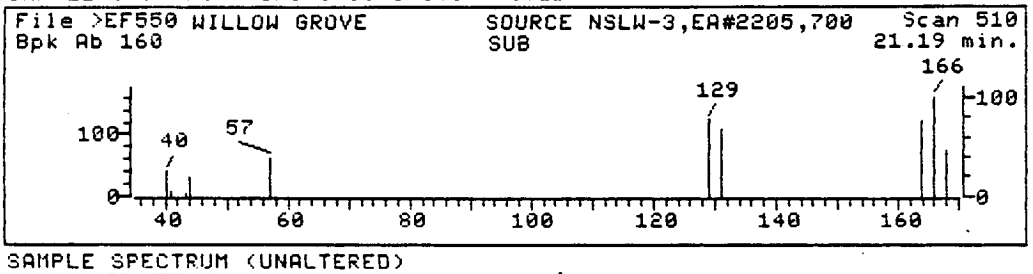
Data File: >EF550::D2 Quant Output File: ^EF550::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-3,EA#2205,7002E5,WATER,5.0ML
Quant Time: 890511 16:11 Quant ID File: EVOA::BD
Injected at: 890511 15:10 Last Calibration: 890511 08:55

Compound No: 28
Compound Name: Bromoform
Scan Number: 451
Retention Time: 18.91 min.
Quant Ion: 173.0
Area: 13137
Concentration: 9.85 UG/L
q-value: 94

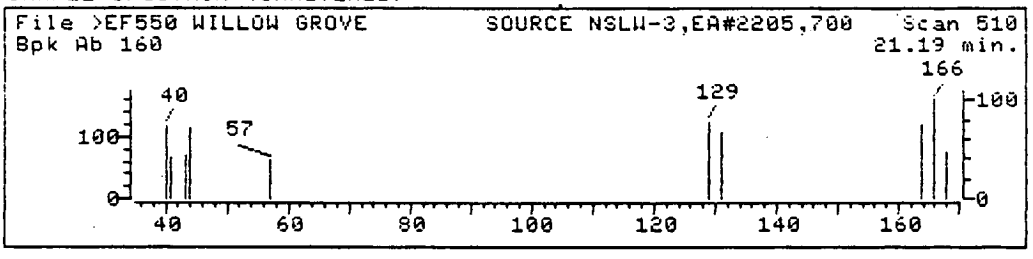
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EF550::D2 Quant Output File: ^EF550::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-3,EA#2205,7002E5,WATER,5.0ML
Quant Time: 890511 16:11 Quant ID File: EVOA::BD
Injected at: 890511 15:10 Last Calibration: 890511 08:55

Compound No: 32
Compound Name: Tetrachloroethene
Scan Number: 510
Retention Time: 21.19 min.
Quant Ion: 164.0
Area: 933
Concentration: 1.32 UG/L
q-value: 99

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLW4

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) WATER Lab Sample ID: EA# 2206

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF553

Level: (low/med) LOW Date Received: 5/ 8/89

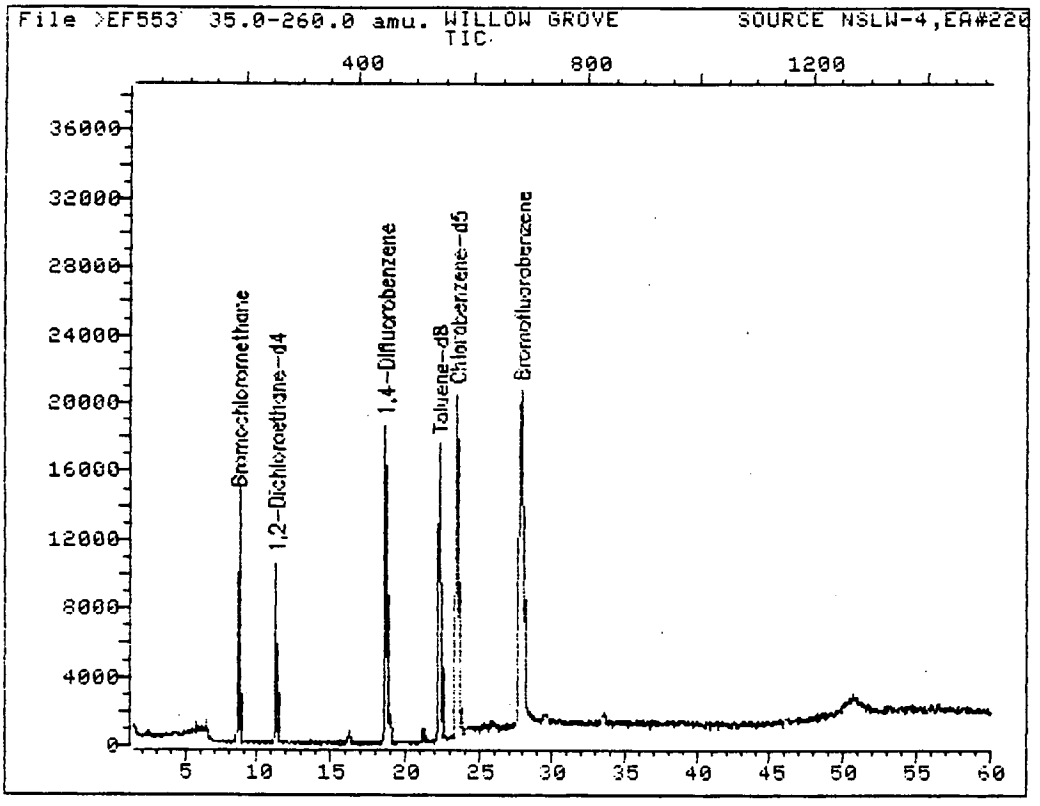
% Moisture: not dec. 100. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	2.	J
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	4.	J
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylb nzene	5.	U
100-42-5	Styren	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EF553::D2 Quant Output File: ^EF553::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-4,EA#2206,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 19:29
Injected at: 890511 18:28

QUANT REPORT

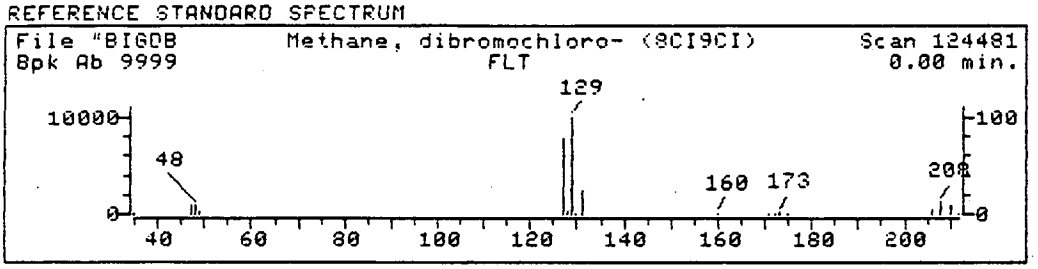
Operator ID: CARL Quant Rev: 6 Quant Time: 890511 19:29
Output File: ^EF553::QT Injected at: 890511 18:28
Data File: >EF553::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: SOURCE NSLW-4,EA#2206,7002E5,WATER,5.0ML

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

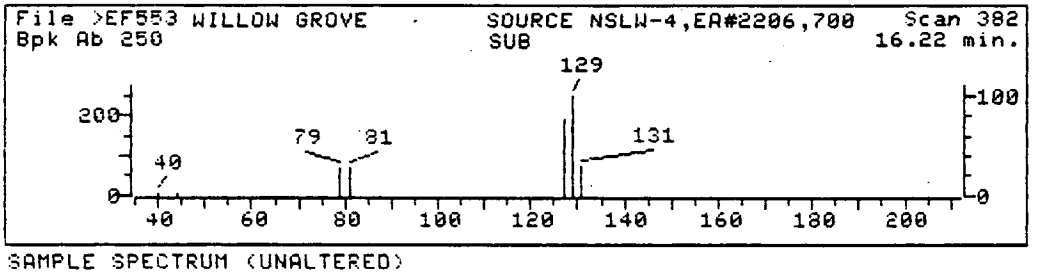
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	20779	50.00	UG/L	98
13)	1,2-Dichloroethane-d4	11.25	65.0	41987	49.42	UG/L	86
15)	*1,4-Difluorobenzene	18.62	114.0	75873	50.00	UG/L	90
24)	Dibromochloromethane	16.22	129.0	2694	2.06	UG/L	98
28)	Bromoform	18.89	173.0	5131	3.83	UG/L	95
29)	*Chlorobenzene-d5	23.51	117.0	65547	50.00	UG/L	98
35)	Toluene-d8	22.31	98.0	71321	51.12	UG/L	98
40)	Bromofluorobenzene	27.85	95.0	69726	50.46	UG/L	84

* Compound is ISTD

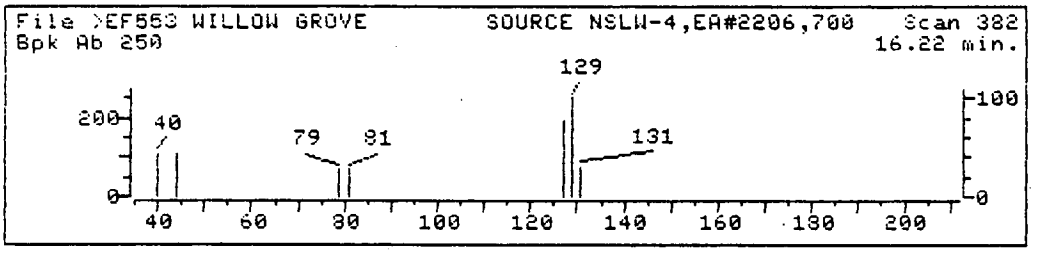
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



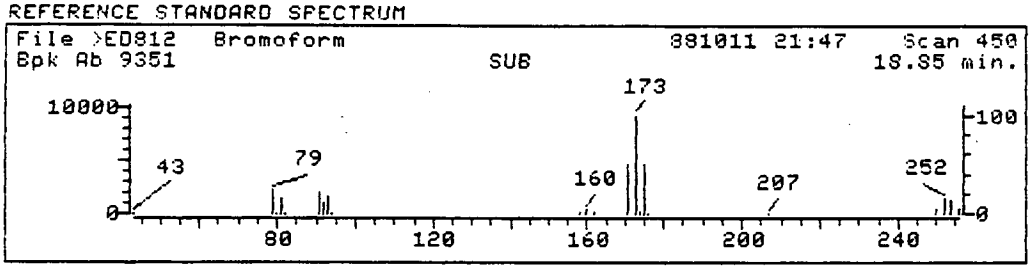
SAMPLE SPECTRUM (UNALTERED)



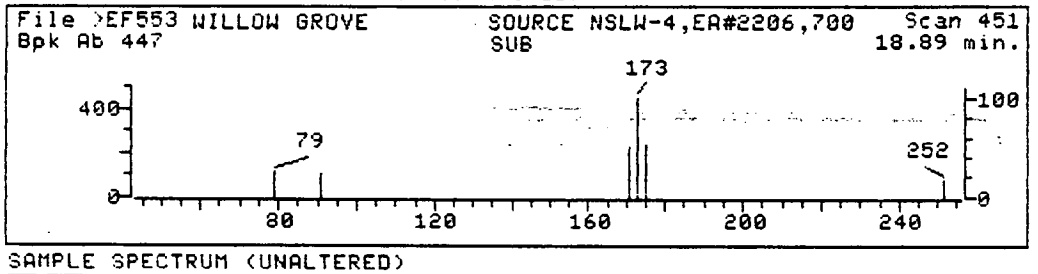
Data File: >EF553::D2 Quant Output File: ^EF553::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-4,EA#2206,7002E5,WATER,5.0ML
Quant Time: 890511 19:29 Quant ID File: EVOA::BD
Injected at: 890511 18:28 Last Calibration: 890511 08:55

Compound No: 24
Compound Name: Dibromochloromethane
Scan Number: 382
Retention Time: 16.22 min.
Quant Ion: 129.0
Area: 2694
Concentration: 2.06 UG/L
q-value: 98

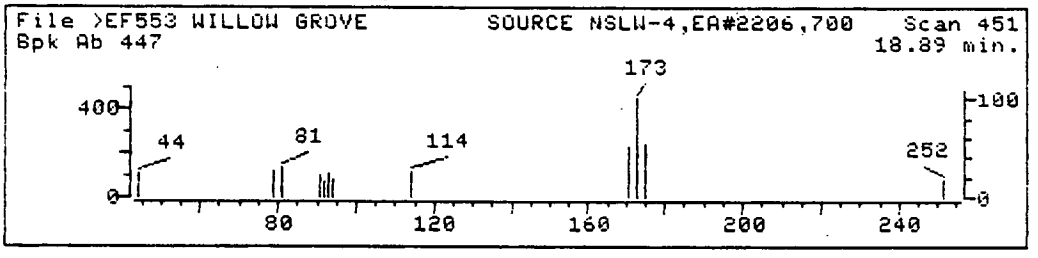
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



SAMPLE SPECTRUM (UNALTERED)



Data File: >EF553::D2 Quant Output File: ^EF553::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-4,EA#2206,7002E5,WATER,5.0ML
Quant Time: 890511 19:29 Quant ID File: EVOA::BD
Injected at: 890511 18:28 Last Calibration: 890511 08:55

Compound No: 28
Compound Name: Bromoform
Scan Number: 451
Retention Time: 18.89 min.
Quant Ion: 173.0
Area: 5131
Concentration: 3.83 UG/L
q-value: 95

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BL (2 May 89)

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) WATER Lab Sample ID: EA # 2100

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF508

Lev l: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 100. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzen	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

TRIP BL

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) WATER Lab Sample ID: EA # 2100

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF508

Level: (low/med) LOW Date Received: 5/ 3/89

% Moisture: not dec. 100. Date Analyzed: 5/ 8/89

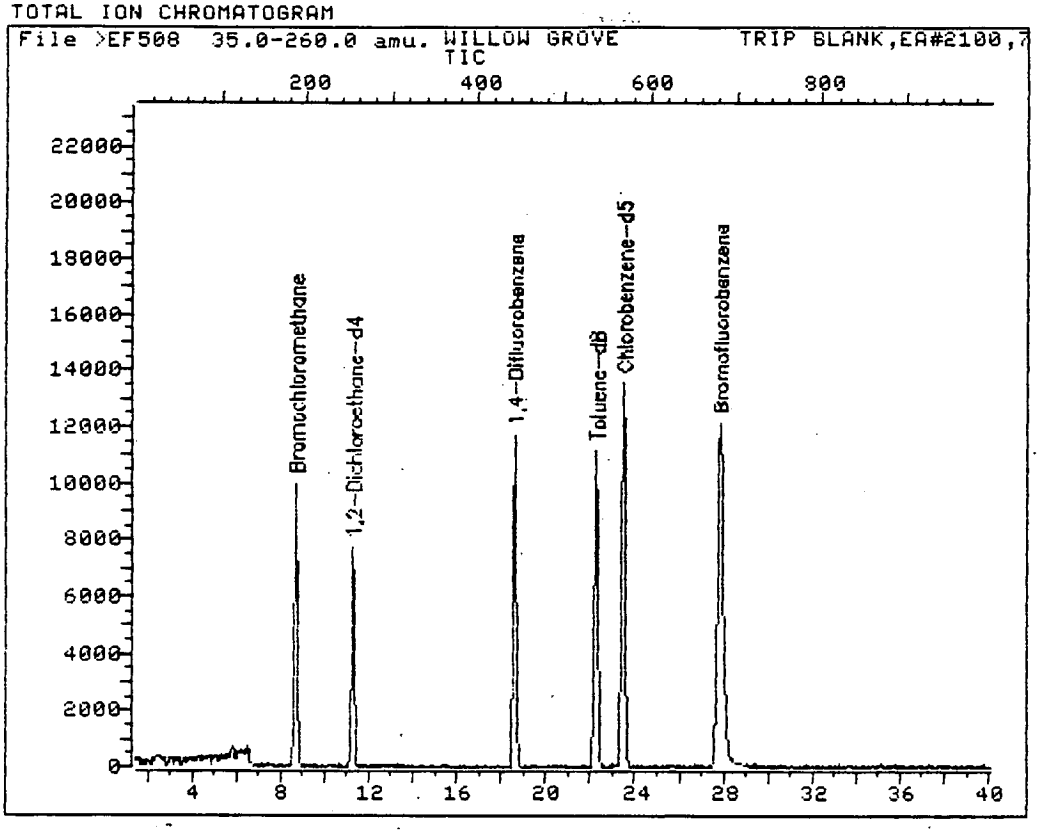
Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

TOTAL ION CHROMATOGRAM



Data File: >EF508::D2 Quant Output File: ^EF508::QT
Name: WILLOW GROVE
Misc: TRIP BLANK,EA#2100,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:37

Operator ID: CARL
Quant Time: 890508 14:53
Injected at: 890508 14:12

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890508 14:53
Output File: ^EF508::QT Injected at: 890508 14:12
Data File: >EF508::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: TRIP BLANK,EA#2100,7002E5,WATER,5.0ML

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:37

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.69	128.0	12794	50.00	UG/L	94
13)	1,2-Dichloroethane-d4	11.29	65.0	34208	55.20	UG/L	79
15)	*1,4-Difluorobenzene	18.61	114.0	44345	50.00	UG/L	91
29)	*Chlorobenzene-d5	23.49	117.0	43469	50.00	UG/L	94
35)	Toluene-d8	22.29	98.0	45613	46.36	UG/L	97
40)	Bromofluorobenzene	27.84	95.0	41333	48.01	UG/L	89

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BL
3,4 May 89

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) WATER Lab Sample ID: EA# 2159

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF548

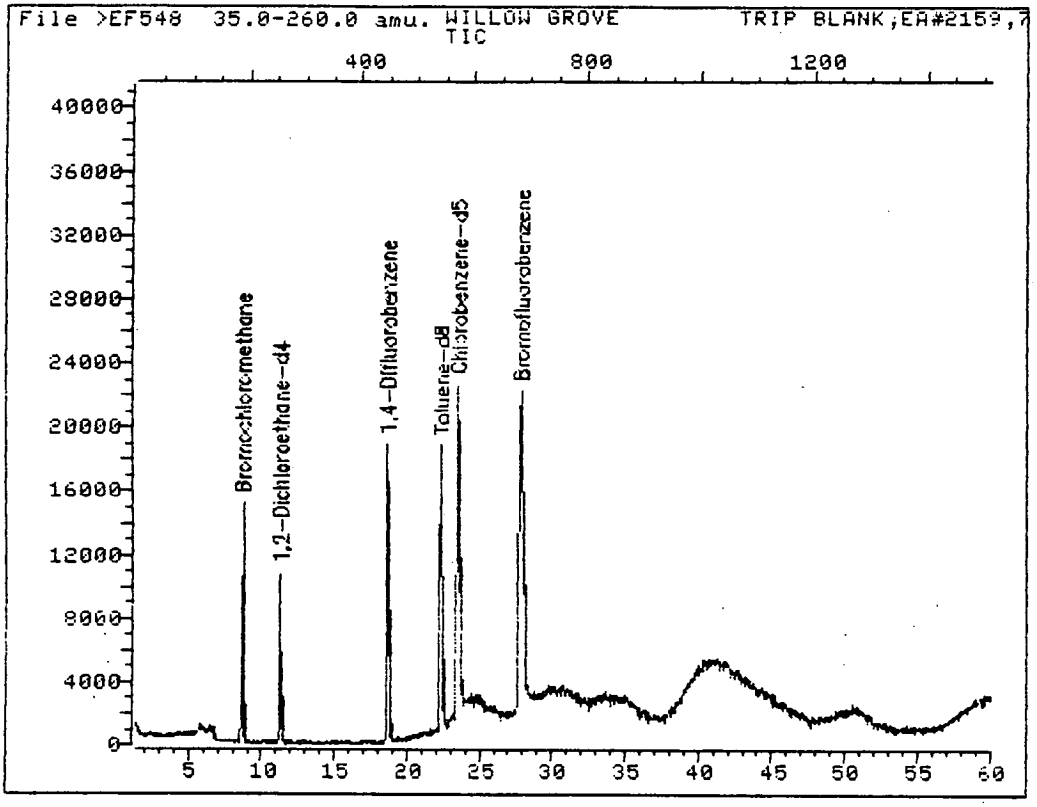
Level: (low/med) LOW Date Received: 5/ 4/89

% Moisture: not dec. 100. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenz ne	5.	U
100-42-5	Styr ne	5.	U
1330-20-7	Xylene (total)	5.	U

TOTAL ION CHROMATOGRAM



Data File: >EF548::D2 Quant Output File: ^EF548::QT
Name: WILLOW GROVE
Misc: TRIP BLANK,EA#2159,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 13:59
Injected at: 890511 12:58

QUANT REPORT

Operator ID: CARL
Output File: ^EF548::QT
Data File: >EF548::D2
Name: WILLOW GROVE
Misc: TRIP BLANK,EA#2159,7002E5,WATER,5.0ML

Quant Rev: 6
Quant Time: 890511 13:59
Injected at: 890511 12:58
Dilution Factor: 1.00000

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	20259	50.00	UG/L	95
13)	1,2-Dichloroethane-d4	11.25	65.0	42679	51.53	UG/L	86
15)	*1,4-Difluorobenzene	18.62	114.0	76012	50.00	UG/L	92
29)	*Chlorobenzene-d5	23.51	117.0	68542	50.00	UG/L	99
35)	Toluene-d8	22.31	98.0	72362	49.60	UG/L	98
40)	Bromofluorobenzene	27.85	95.0	72164	49.94	UG/L	80

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TRIP BL
4 May 89

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) WATER Lab Sample ID: EA # 2207

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF554

Level: (low/med) LOW Date Received: 5/ 8/89

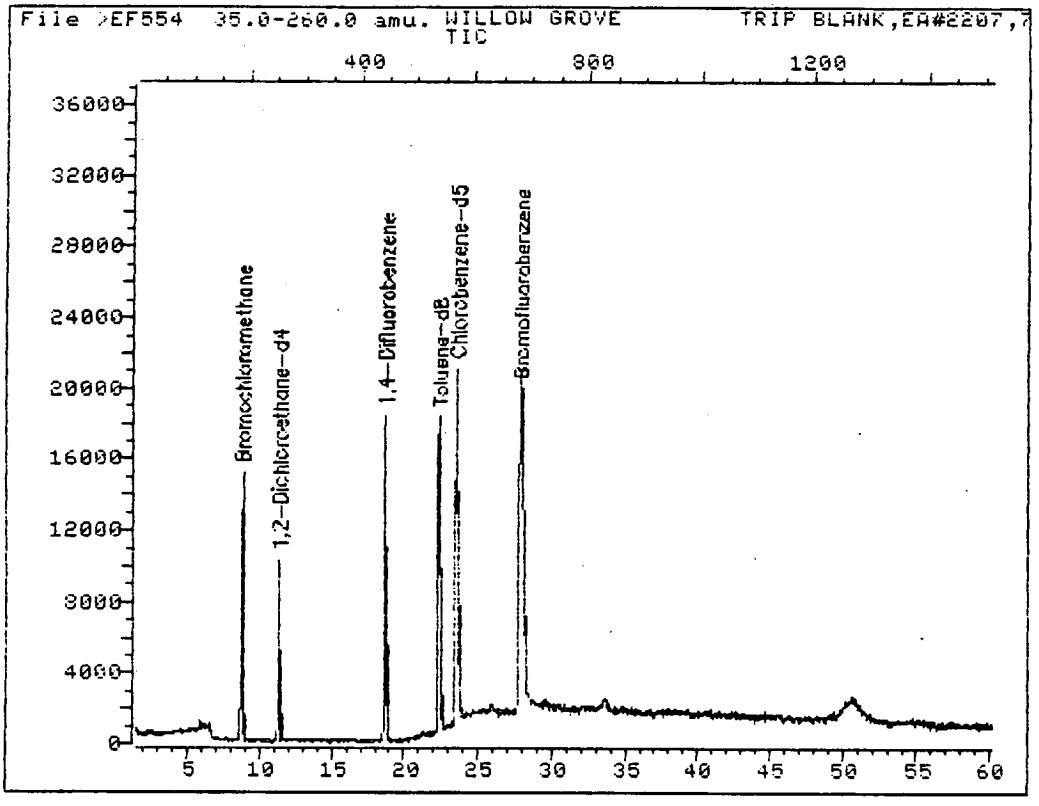
% Moisture: not dec. 100. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EF554::D2 Quant Output File: ^EF554::QT
Name: WILLOW GROVE
Misc: TRIP BLANK,EA#2207,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 20:35
Injected at: 890511 19:34

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890511 20:35
Output File: ^EF554::QT Injected at: 890511 19:34
Data File: >EF554::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: TRIP BLANK,EA#2207,7002E5,WATER,5.0ML

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.72	128.0	20880	50.00	UG/L	91
13)	1,2-Dichloroethane-d4	11.28	65.0	42485	49.77	UG/L	84
15)	*1,4-Difluorobenzene	18.65	114.0	74531	50.00	UG/L	91
29)	*Chlorobenzene-d5	23.54	117.0	64536	50.00	UG/L	97
35)	Toluene-d8	22.34	98.0	71275	51.89	UG/L	96
40)	Bromofluorobenzene	27.84	95.0	68721	50.51	UG/L	83

* Compound is ISTD

C. Standards Data

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Instrument ID: 7002E5 Calibration Date(s): 4/21/89 4/21/89

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

Min $\overline{RRF}$ for SPCC(#) = .300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 = EF375 RRF50 = EF376
RRF100= EF377 RRF150= EF378 RRF200= EF379

COMPOUND	RRF20	RRF50	RRF100	RRF150	RRF200	$\overline{RRF}$	% RSD
Chloromethane #	.283	.556	.558	.593	.614	.521	25.9#
Bromomethane	.791	1.045	1.089	.943	.916	.957	12.2
Vinyl Chloride *	.603	.869	.918	.913	.778	.816	16.1*
Chloroethane	.437	.547	.581	.604	.609	.556	12.7
Methylene Chloride	1.262	1.417	1.379	1.240	1.288	1.317	5.9
Acetone	.084	.485	.458	.345	.367	.348	45.7
Carbon Disulfide	2.923	3.178	3.258	3.203	3.351	3.183	5.0
1,1-Dichloroethene *	.996	1.116	1.134	1.075	1.144	1.093	5.5*
1,1-Dichloroethane #	2.072	2.430	2.531	2.345	2.502	2.376	7.8#
1,2-Dichloroethene (total)	.963	1.220	1.289	1.237	1.276	1.197	11.2
Chloroform *	3.381	3.815	3.927	3.515	3.693	3.666	6.0*
1,2-Dichloroethane	2.579	3.335	3.407	3.112	3.158	3.118	10.4
2-Butanone	.045	.027	.031	.026	.027	.031	25.7
1,1,1-Trichloroethane	.792	1.063	1.011	.938	.928	.946	10.8
Carbon Tetrachloride	1.003	1.199	1.112	1.010	.999	1.065	8.3
Vinyl Acetate	.584	.614	.712	.608	.685	.640	8.6
Bromodichloromethane	.914	1.177	1.149	1.063	1.059	1.073	9.6
1,2-Dichloropropane *	.299	.356	.388	.331	.372	.349	10.0*
cis-1,3-Dichloropropene	.529	.704	.734	.650	.688	.661	12.1
Trichloroethene	.468	.504	.537	.457	.498	.493	6.4
Dibromochloromethane	.978	1.105	1.113	.977	1.000	1.035	6.6
1,1,2-Trichloroethane	.392	.417	.448	.373	.405	.407	6.9
Benzene	.640	.815	.844	.748	.796	.769	10.4
trans-1,3-Dichloropropene	.447	.572	.604	.540	.562	.545	10.9
Bromoform #	.842	1.002	1.046	.933	.960	.957	8.0#
4-Methyl-2-Pentanone	.411	.347	.389	.312	.359	.364	10.5
2-Hexanone	.277	.239	.276	.211	.240	.249	11.2
Tetrachloro thene	.513	.576	.575	.498	.540	.541	6.5
1,1,2,2-Tetrachloroethane #	.620	.731	.755	.657	.696	.692	7.9#
Toluene *	.520	.651	.659	.584	.606	.604	9.3*
Chlorobenzene #	.919	1.015	1.025	.885	.948	.958	6.3#
Ethylbenzene *	.333	.431	.455	.400	.419	.408	11.4*
Styrene	.857	.982	1.024	.877	.939	.936	7.5
Xylene (total)	.542	.625	.643	.553	.588	.590	7.4
Toluene-d8	1.045	1.061	1.050	1.044	1.045	1.049	.7
Bromofluorobenzene	1.052	1.064	1.075	1.007	1.063	1.052	2.5
1,2-Dichloro thane-d4	2.400	2.632	2.761	2.765	2.879	2.687	6.8

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Instrument ID: 7002E5 Calibration Date(s): 4/21/89 4/21/89

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

Min $\overline{RRF}$ for SPCC(#) = .300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF20 = EF375 RRF50 = EF376
RRF100= EF377 RRF150= EF378 RRF200= EF379

COMPOUND	RRF20	RRF50	RRF100	RRF150	RRF200	$\overline{RRF}$	% RSD
Chloromethane #	.283	.556	.558	.593	.614	.521	25.9#
Bromomethane	.791	1.045	1.089	.943	.916	.957	12.2
Vinyl Chloride *	.603	.869	.918	.913	.778	.816	16.1*
Chloroethane	.437	.547	.581	.604	.609	.556	12.7
Methylene Chloride	1.262	1.417	1.379	1.240	1.288	1.317	5.9
Acetone	.084	.485	.458	.345	.367	.348	45.7
Carbon Disulfide	2.923	3.178	3.258	3.203	3.351	3.183	5.0
1,1-Dichloroethene *	.996	1.116	1.134	1.075	1.144	1.093	5.5*
1,1-Dichloroethane #	2.072	2.430	2.531	2.345	2.502	2.376	7.8#
1,2-Dichloroethene (total)	.963	1.220	1.289	1.237	1.276	1.197	11.2
Chloroform *	3.381	3.815	3.927	3.515	3.693	3.666	6.0*
1,2-Dichloroethane	2.579	3.335	3.407	3.112	3.158	3.118	10.4
2-Butanone	.045	.027	.031	.026	.027	.031	25.7
1,1,1-Trichloroethane	.792	1.063	1.011	.938	.928	.946	10.8
Carbon Tetrachloride	1.003	1.199	1.112	1.010	.999	1.065	8.3
Vinyl Acetate	.584	.614	.712	.608	.685	.640	8.6
Bromodichloromethane	.914	1.177	1.149	1.063	1.059	1.073	9.6
1,2-Dichloropropane *	.299	.356	.388	.331	.372	.349	10.0*
cis-1,3-Dichloropropene	.529	.704	.734	.650	.688	.661	12.1
Trichloroethene	.468	.504	.537	.457	.498	.493	6.4
Dibromochloromethane	.978	1.105	1.113	.977	1.000	1.035	6.6
1,1,2-Trichloroethane	.392	.417	.448	.373	.405	.407	6.9
Benzene	.640	.815	.844	.748	.796	.769	10.4
trans-1,3-Dichloropropene	.447	.572	.604	.540	.562	.545	10.9
Bromoform #	.842	1.002	1.046	.933	.960	.957	8.0#
4-Methyl-2-Pentanone	.411	.347	.389	.312	.359	.364	10.5
2-Hexanone	.277	.239	.276	.211	.240	.249	11.2
Tetrachloroethene	.513	.576	.575	.498	.540	.541	6.5
1,1,2,2-Tetrachloroethane #	.620	.731	.755	.657	.696	.692	7.9#
Toluene *	.520	.651	.659	.584	.606	.604	9.3*
Chlorobenzene #	.919	1.015	1.025	.885	.948	.958	6.3#
Ethylbenzene *	.333	.431	.455	.400	.419	.408	11.4*
Styrene	.857	.982	1.024	.877	.939	.936	7.5
Xylene (total)	.542	.625	.643	.553	.588	.590	7.4
Toluene-d8	1.045	1.061	1.050	1.044	1.045	1.049	.7
Bromofluorobenzene	1.052	1.064	1.075	1.007	1.063	1.052	2.5
1,2-Dichloroethane-d4	2.400	2.632	2.761	2.765	2.879	2.687	6.8

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Instrument ID: 7002E5 Calibration Date: 5/ 6/89 Time: 7:41

Lab File ID: EF484 Init. Calib. Date(s): 4/21/89 4/21/89

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = .300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF50	%D	
Chloromethane	#	.521	.448	14.1	#
Bromomethane		.957	.807	15.6	
Vinyl Chloride	*	.816	.679	16.8	*
Chloroethane		.556	.466	16.2	
Methylene Chloride		1.317	1.103	16.3	
Acetone		.348	.663	90.7	
Carbon Disulfide		3.183	2.390	24.9	
1,1-Dichloroethene	*	1.093	.838	23.3	*
1,1-Dichloroethane	#	2.376	1.875	21.1	#
1,2-Dichloroethene (total)		1.197	.906	24.3	
Chloroform	*	3.666	2.982	18.7	*
1,2-Dichloroethane		3.118	2.708	13.1	
2-Butanone		.031	.048	54.3	
1,1,1-Trichloroethane		.946	.811	14.3	
Carbon Tetrachloride		1.065	.888	16.6	
Vinyl Acetate		.640	.586	8.5	
Bromodichloromethane		1.073	.959	10.6	
1,2-Dichloropropane	*	.349	.316	9.5	*
cis-1,3-Dichloropropene		.661	.592	10.4	
Trichloroethene		.493	.430	12.8	
Dibromochloromethane		1.035	.942	9.0	
1,1,2-Trichloroethane		.407	.382	6.2	
Benzene		.769	.678	11.8	
trans-1,3-Dichloropropene		.545	.501	8.1	
Bromoform	#	.957	.898	6.2	#
4-Methyl-2-Pentanone		.364	.377	3.5	
2-Hexanone		.249	.263	5.7	
Tetrachloroethene		.541	.474	12.4	
1,1,2,2-Tetrachloroethane	#	.692	.682	1.4	#
Toluene	*	.604	.559	7.5	*
Chlorobenzene	#	.958	.875	8.7	#
Ethylbenzene	*	.408	.362	11.3	*
Styrene		.936	.823	12.1	
Xylene (total)		.590	.516	12.6	
Toluene-d8		1.049	1.088	3.7	
Bromofluorobenzene		1.052	.905	14.0	
1,2-Dichloroethane-d4		2.687	2.477	7.8	

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Instrument ID: 7002E5 Calibration Date: 5/ 8/89 Time: 8:26

Lab File ID: EF501 Init. Calib. Date(s): 4/21/89 4/21/89

Matrix:(soil/water) WATER Level:(low/med): LOW Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = .300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		$\overline{RRF}$	RRF50	%D	
Chloromethane	#	.521	.558	7.2	#
Bromomethane		.957	.939	1.8	
Vinyl Chloride	*	.816	.708	13.2	*
Chloroethane		.556	.571	2.8	
Methylene Chloride		1.317	1.084	17.7	
Acetone		.348	.784	125.3	
Carbon Disulfide		3.183	2.384	25.1	
1,1-Dichloroethene	*	1.093	.946	13.5	*
1,1-Dichloroethane	#	2.376	2.002	15.7	#
1,2-Dichloroethene (total)		1.197	1.029	14.0	
Chloroform	*	3.666	2.960	19.3	*
1,2-Dichloroethane		3.118	2.611	16.3	
2-Butanone		.031	.047	50.6	
1,1,1-Trichloroethane		.946	.787	16.8	
Carbon Tetrachloride		1.065	.866	18.6	
Vinyl Acetate		.640	.535	16.5	
Bromodichloromethane		1.073	.914	14.8	
1,2-Dichloropropane	*	.349	.309	11.5	*
cis-1,3-Dichloropropene		.661	.592	10.4	
Trichloroethene		.493	.466	5.5	
Dibromochloromethane		1.035	.886	14.4	
1,1,2-Trichloroethane		.407	.381	6.5	
Benzene		.769	.687	10.6	
trans-1,3-Dichloropropene		.545	.492	9.7	
Bromoform	#	.957	.861	10.0	#
4-Methyl-2-Pentanone		.364	.426	17.1	
2-Hexanone		.249	.324	30.5	
Tetrachloroethene		.541	.484	10.5	
1,1,2,2-Tetrachloroethane	#	.692	.656	5.2	#
Toluene	*	.604	.581	3.8	*
Chlorobenzene	#	.958	.868	9.4	#
Ethylbenzene	*	.408	.381	6.4	*
Styrene		.936	.834	10.9	
Xylene (total)		.590	.518	12.2	
Toluene-d8		1.049	1.132	7.9	
Bromofluorobenzene		1.052	.990	5.9	
1,2-Dichloroethane-d4		2.687	2.422	9.9	

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Nam : EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Instrum nt ID: 7002E5 Calibration Date: 5/ 9/89 Time: 13:03

Lab File ID: EF518 Init. Calib. Date(s): 4/21/89 4/21/89

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = .300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF50	%D	
Chloromethane	#	.521	.631	21.2	#
Bromomethane		.957	.878	8.3	
Vinyl Chloride	*	.816	.755	7.5	*
Chloroethane		.556	.545	2.0	
Methylene Chloride		1.317	1.033	21.6	
Acetone		.348	.638	83.3	
Carbon Disulfide		3.183	2.334	26.7	
1,1-Dichloroethene	*	1.093	.890	18.6	*
1,1-Dichloroethane	#	2.376	1.898	20.1	#
1,2-Dichloroethene (total)		1.197	.997	16.7	
Chloroform	*	3.666	2.844	22.4	*
1,2-Dichloroethane		3.118	2.443	21.7	
2-Butanone		.031	.065	108.9	
1,1,1-Trichloroethane		.946	.755	20.2	
Carbon Tetrachloride		1.065	.813	23.6	
Vinyl Acetate		.640	.588	8.2	
Bromodichloromethane		1.073	.921	14.1	
1,2-Dichloropropane	*	.349	.312	10.6	*
cis-1,3-Dichloropropene		.661	.599	9.3	
Trichloroethene		.493	.461	6.5	
Dibromochloromethane		1.035	.940	9.1	
1,1,2-Trichloroethane		.407	.393	3.4	
Benzene		.769	.698	9.1	
trans-1,3-Dichloropropene		.545	.477	12.5	
Bromoform	#	.957	1.019	6.5	#
4-Methyl-2-Pentanone		.364	.502	38.0	
2-Hexanone		.249	.364	46.4	
Tetrachloroethene		.541	.543	.4	
1,1,2,2-Tetrachloroethane	#	.692	.740	7.0	#
Toluene	*	.604	.585	3.2	*
Chlorobenzene	#	.958	.881	8.1	#
Ethylbenzene	*	.408	.382	6.4	*
Styrene		.936	.885	5.4	
Xylene (total)		.590	.536	9.2	
Toluene-d8		1.049	1.068	1.8	
Bromofluorobenzene		1.052	1.031	2.0	
1,2-Dichloroethane-d4		2.687	2.085	22.4	

FORM VII VOA 1/87 Rev.

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Instrument ID: 7002E5 Calibration Date: 5/11/89 Time: 8:00

Lab File ID: EF543 Init. Calib. Date(s): 4/21/89 4/21/89

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

Min RRF50 for SPCC(#) = .300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND	RRF	RRF50	%D
Chloromethane #	.521	.677	29.9 #
Bromomethane	.957	.865	9.6
Vinyl Chloride *	.816	.916	12.2 *
Chloroethane	.556	.445	20.0
Methylene Chloride	1.317	1.048	20.4
Acetone	.348	.667	91.7
Carbon Disulfide	3.183	2.293	28.0
1,1-Dichloroethene *	1.093	.995	9.0 *
1,1-Dichloroethane #	2.376	2.028	14.6 #
1,2-Dichloroethene (total)	1.197	1.039	13.2
Chloroform *	3.666	2.820	23.1 *
1,2-Dichloroethane	3.118	2.368	24.1
2-Butanone	.031	.089	184.2
1,1,1-Trichloroethane	.946	.724	23.5
Carbon Tetrachloride	1.065	.760	28.6
Vinyl Acetate	.640	.603	5.9
Bromodichloromethane	1.073	.857	20.1
1,2-Dichloropropane *	.349	.341	2.4 *
cis-1,3-Dichloropropene	.661	.599	9.3
Trichloroethene	.493	.450	8.7
Dibromochloromethane	1.035	.860	16.9
1,1,2-Trichloroethane	.407	.381	6.5
Benzene	.769	.735	4.4
trans-1,3-Dichloropropene	.545	.482	11.7
Bromoform #	.957	.883	7.7 #
4-Methyl-2-Pentanone	.364	.490	34.8
2-Hexanone	.249	.375	51.0
Tetrachloroethene	.541	.532	1.5
1,1,2,2-Tetrachloroethane #	.692	.747	7.9 #
Toluene *	.604	.593	1.9 *
Chlorobenzene #	.958	.897	6.4 #
Ethylbenzene *	.408	.388	4.7 *
Styrene	.936	.842	10.0
Xylene (total)	.590	.504	14.5
Toluene-d8	1.049	1.064	1.4
Bromofluorobenzene	1.052	1.054	.2
1,2-Dichloro thane-d4	2.687	2.044	23.9

FORM VII VOA 1/87 Rev.

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

.ab Name: EAENG Contract: 68-01-7436

.ab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

.ab File ID (Standard): EF484 Date Analyzed: 5/ 6/89

:nstrument ID: 7002E5 Time Analyzed: 7:41

latrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	14831.	8.65	49980.	18.57	45369.	23.42
	UPPER LIMIT	29662.	9.15	99960.	19.07	90738.	23.92
	LOWER LIMIT	7416.	8.15	24990.	18.07	22685.	22.92
	EPA SAMPLE NO.						
1	VBLK1	16157.	8.61	59128.	18.57	51876.	23.42
2	NSLB1S2	12338.	8.65	45502.	18.57	40405.	23.41
3	NSLB2S1	12611.	8.65	43200.	18.57	37313.	23.41
4	NSLB3S3 DL	12038.	8.65	44814.	18.57	35898.	23.41
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag int rnal standard area values with an ast risk

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

.ab Name: EAENG Contract: 68-01-7436

.ab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

.ab File ID (Standard): EF501 Date Analyzed: 5/ 8/89

:nstrument ID: 7002E5 Time Analyzed: 8:26

!atrix:(soil/water) WATER Level:(low/med): LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	15920.	8.65	55614.	18.61	48815.	23.46
	UPPER LIMIT	31840.	9.15	111228.	19.11	97630.	23.96
	LOWER LIMIT	7960.	8.15	27807.	18.11	24408.	22.96
	EPA SAMPLE NO.						
1	VBLK2	12940.	8.71	46252.	18.64	39890.	23.48
092 2	NSLB4S4	13391.	8.69	47281.	18.61	42069.	23.50
094 3	NSLB5S3	12196.	8.67	42224.	18.63	34843.	23.48
096 4	NSLB6S2	11067.	8.65	38140.	18.61	38169.	23.46
098 5	RINSE#1	11403.	8.65	36682.	18.61	34291.	23.45
099 6	RINSE#2	12834.	8.70	46506.	18.63	43475.	23.47
100 7	TRIP BL	12794.	8.69	44345.	18.61	43469.	23.50
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag internal standard area values with an asterisk

8A

VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab Fil ID (Standard): EF518 Date Analyzed: 5/ 9/89

Instrument ID: 7002E5 Time Analyzed: 13:03

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	21850.	8.65	73880.	18.58	63600.	23.43
	UPPER LIMIT	43700.	9.15	147760.	19.08	127200.	23.93
	LOWER LIMIT	10925.	8.15	36940.	18.08	31800.	22.93
	EPA SAMPLE NO.						
1	VBLK3	21520.	8.72	73755.	18.65	65920.	23.49
101 2	SCE9SL1 source water	19360.	8.62	69523.	18.59	61147.	23.43
102 3	DUP9SL1	18646.	8.65	63641.	18.58	56438.	23.43
104 4	DUP	20510.	8.62	72163.	18.58	62581.	23.43
5	DUP MS	20136.	8.62	69999.	18.58	61823.	23.43
6	DUP MSD	20151.	8.62	71553.	18.54	63237.	23.43
105DL 7	FTAB1S2 DL(1+5)	20239.	8.65	71853.	18.58	60466.	23.43
107 8	FTAB2S3	17747.	8.62	62855.	18.59	60625.	23.44
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an ast risk

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Lab File ID (Standard): EF518 Date Analyzed: 5/ 9/89

Instrument ID: 7002E5 Time Analyzed: 13:03

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	21850.	8.65	73880.	18.58	63600.	23.43
	UPPER LIMIT	43700.	9.15	147760.	19.08	127200.	23.93
	LOWER LIMIT	10925.	8.15	36940.	18.08	31800.	22.93
	EPA SAMPLE NO.						
1	VBLK1	21520.	8.72	73755.	18.65	65920.	23.49
50 2	FTAB3S1	18600.	8.63	69393.	18.56	62349.	23.45
52 3	FTAB4S2	19455.	8.66	68860.	18.58	62074.	23.44
56 4	B2S1	21330.	8.62	77883.	18.58	71905.	23.43
54 5	B1S3 DL	19074.	8.65	68672.	18.58	61213.	23.44
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag internal standard area values with an ast risk

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Cod : EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Lab File ID (Standard): EF543 Date Analyzed: 5/11/89

Instrument ID: 7002E5 Time Analyzed: 8:00

Matrix:(soil/water) SOIL Level:(low/med): LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	21872.	8.68	76672.	18.61	66333.	23.46
	UPPER LIMIT	43744.	9.18	153344.	19.11	132666.	23.96
	LOWER LIMIT	10936.	8.18	38336.	18.11	33167.	22.96
	EPA SAMPLE NO.						
1	VBLK4	21248.	8.65	74837.	18.62	65137.	23.47
05 2	FTAB1S2 DL (1-25)	20587.	8.67	70722.	18.64	63825.	23.53
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IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100%
of internal standard area.
LOWER LIMIT = - 50%
of internal standard area.

Column used to flag internal standard area values with an asterisk

8A
VOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Lab File ID (Standard): EF543 Date Analyzed: 5/11/89

Instrument ID: 7002E5 Time Analyzed: 8:00

Matrix:(soil/water) WATER Level:(low/med): LOW Column:(pack/cap) PACK

		IS1(BCM) AREA #	RT	IS2(DFB) AREA #	RT	IS3(CBZ) AREA #	RT
	12 HOUR STD	21872.	8.68	76672.	18.61	66333.	23.46
	UPPER LIMIT	43744.	9.18	153344.	19.11	132666.	23.96
	LOWER LIMIT	10936.	8.18	38336.	18.11	33167.	22.96
	EPA SAMPLE NO.						
1	VBLK2	21248.	8.65	74837.	18.62	65137.	23.47
2	B1S3 DL	18869.	8.68	68369.	18.61	61737.	23.50
3	RINSE1	20877.	8.77	73953.	18.74	68271.	23.62
4	TRIP BL	20259.	8.65	76012.	18.62	68542.	23.51
5	NSLW2	20596.	8.68	73623.	18.61	64916.	23.49
6	NSLW3	20729.	8.67	75524.	18.63	66615.	23.52
7	NSLW3MS	21630.	8.66	77442.	18.63	68188.	23.48
8	NSLW3MSD	20866.	8.67	73450.	18.64	63400.	23.48
9	NSLW4	20779.	8.65	75873.	18.62	65547.	23.51
10	TRIP BL	20880.	8.72	74531.	18.65	64536.	23.54
11							
12							
13							
14							
15							
16							
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19							
20							
21							
22							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

UPPER LIMIT = + 100% of internal standard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

D. Raw QC Data

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF485

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/ 6/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenz ne	5.	U
100-42-5	Styren	5.	U
1330-20-7	Xyl ne (total)	5.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF485

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/ 6/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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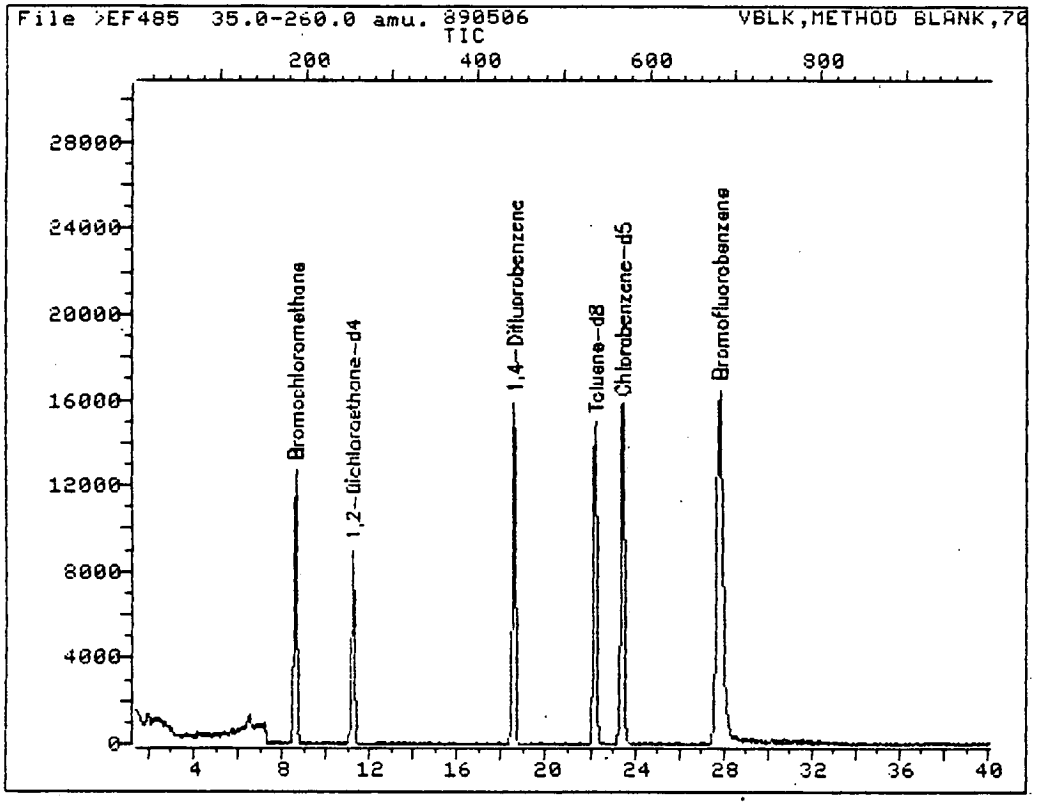
TOTAL ION CHROMATOGRAM



Data File: >EF485::D2 Quant Output File: ^EF485::QT
Name: 890506
Misc: VBLK,METHOD BLANK,7002E5

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890503 08:26

Operator ID: CARL
Quant Time: 890506 09:26
Injected at: 890506 08:45

QUANT REPORT

Operator ID: CARL
Output File: ^EF485::QT
Data File: >EF485::D2
Name: 890506
Misc: VBLK,METHOD BLANK,7002E5

Quant Rev: 6
Quant Time: 890506 09:26
Injected at: 890506 08:45
Dilution Factor: 1.00000

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890503 08:26

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.61	128.0	16157	50.00	UG/L	98
13)	1,2-Dichloroethane-d4	11.21	65.0	40153	48.92	UG/L	80
15)	*1,4-Difluorobenzene	18.57	114.0	59128	50.00	UG/L	92
29)	*Chlorobenzene-d5	23.42	117.0	51876	50.00	UG/L	97
35)	Toluene-d8	22.21	98.0	57216	50.96	UG/L	99
40)	Bromofluorobenzene	27.79	95.0	51459	47.47	UG/L	88

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF502

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF502

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/ 8/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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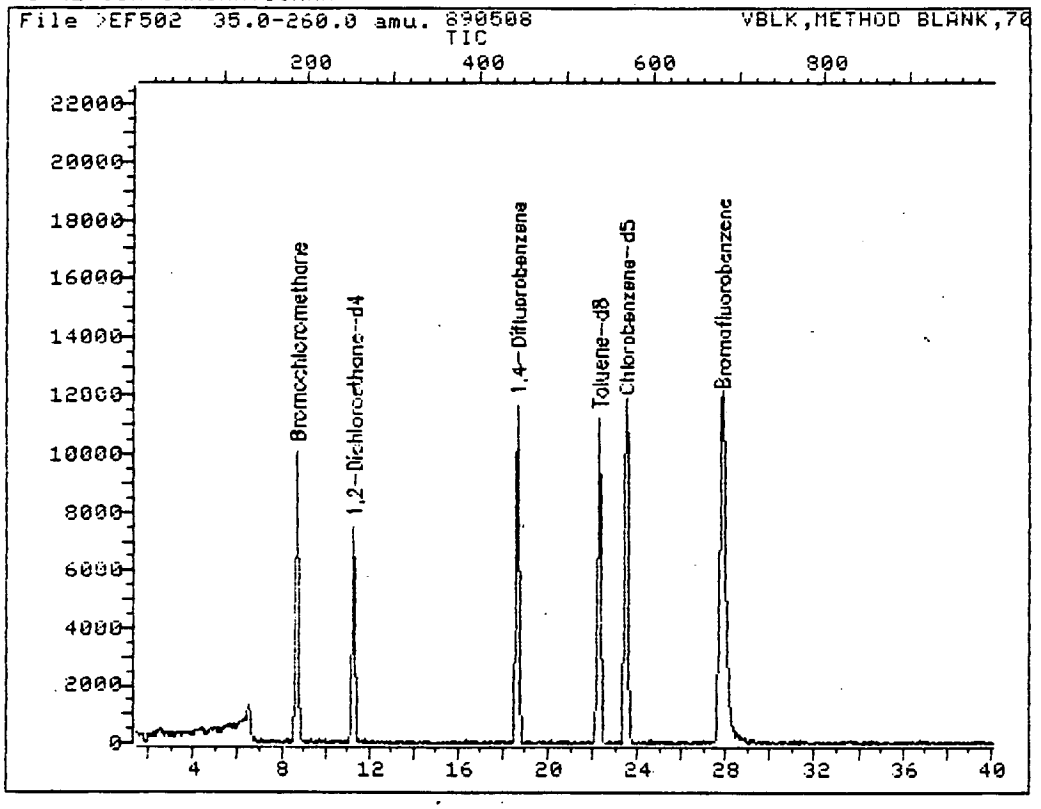
30.					

FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EF502::D2 Quant Output File: ^EF502::QT
Name: 890508
Misc: VBLK,METHOD BLANK,7002E5

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:17

Operator ID: CARL
Quant Time: 890508 10:13
Injected at: 890508 09:31

QUANT REPORT

Operator ID: CARL
Output File: ^EF502::QT
Data File: >EF502::D2
Name: 890508
Misc: VBLK,METHOD BLANK,7002E5

Quant Rev: 6
Quant Time: 890508 10:13
Injected at: 890508 09:31
Dilution Factor: 1.00000

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890508 09:17

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.71	128.0	12940	50.00	UG/KG	83
13)	1,2-Dichloroethane-d4	11.31	65.0	32011	51.07	UG/KG	83
15)	*1,4-Difluorobenzene	18.64	114.0	46252	50.00	UG/KG	91
29)	*Chlorobenzene-d5	23.48	117.0	39890	50.00	UG/KG	95
35)	Toluene-d8	22.28	98.0	44228	48.98	UG/KG	96
40)	Bromofluorobenzene	27.82	95.0	41503	52.53	UG/KG	82

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sampl wt/vol: 5.0 (g/mL) G Lab File ID: EF519

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK3

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF519

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.					
2.					
3.					
4.					
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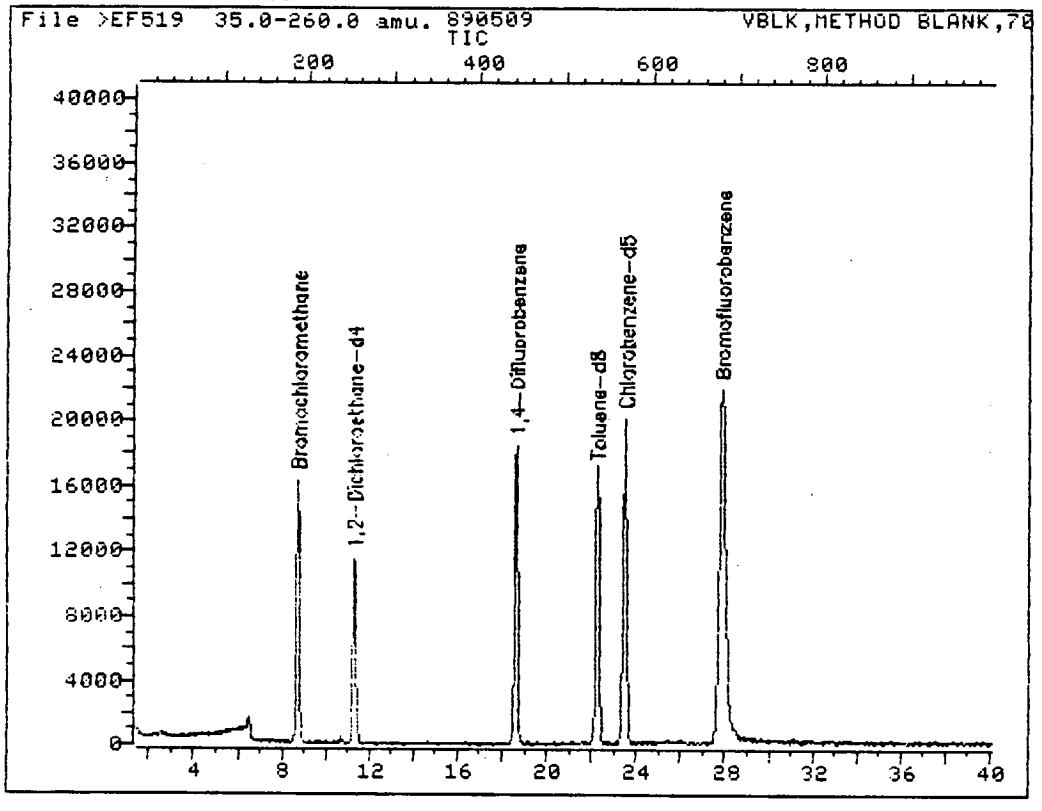
30.					

TOTAL ION CHROMATOGRAM



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Name: 890509
Misc: VBLK,METHOD BLANK,7002E5

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 14:56
Injected at: 890509 14:15

QUANT REPORT

Operator ID: CARL
Output File: ^EF519::QT
Data File: >EF519::D2
Name: 890509
Misc: VBLK,METHOD BLANK,7002E5

Quant Rev: 6
Quant Time: 890509 14:56
Injected at: 890509 14:15
Dilution Factor: 1.00000

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.72	128.0	21520	50.00	UG/KG	87
13)	1,2-Dichloroethane-d4	11.28	65.0	46229	51.51	UG/KG	86
15)	*1,4-Difluorobenzene	18.65	114.0	73755	50.00	UG/KG	90
29)	*Chlorobenzene-d5	23.49	117.0	65920	50.00	UG/KG	94
35)	Toluene-d8	22.25	98.0	70027	49.74	UG/KG	97
40)	Bromofluorobenzene	27.84	95.0	68935	50.71	UG/KG	92

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF519

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK1

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF519

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
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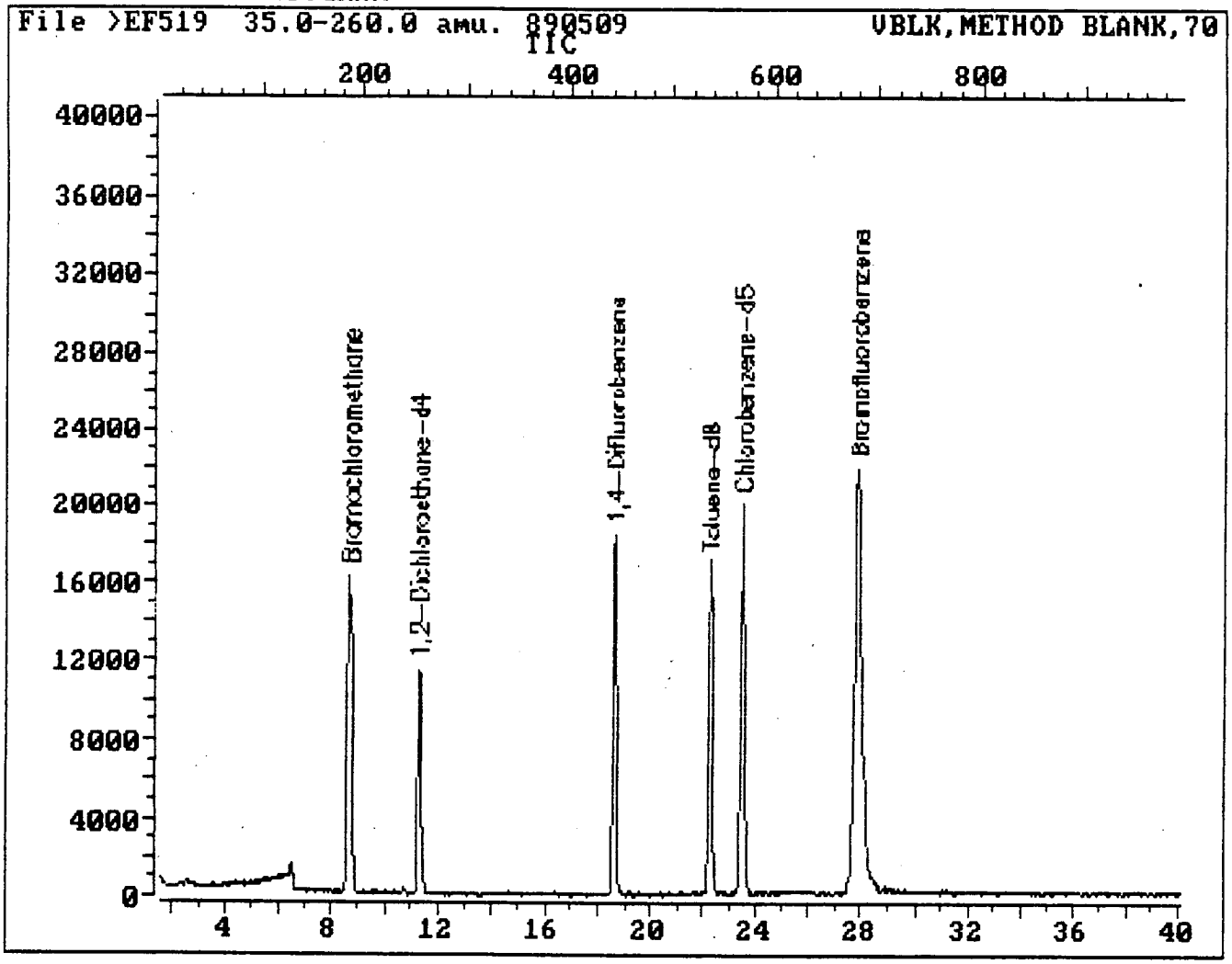
TOTAL ION CHROMATOGRAM



Data File: >EF519::D2 Quant Output File: ^EF519::QT
Name: 890509
Misc: VBLK,METHOD BLANK,7002E5

Id File: EVOAS::BD
Titl : CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 14:56
Injected at: 890509 14:15

QUANT REPORT

Operator ID: CARL
Output File: ^EF519::QT
Data File: >EF519::D2
Name: 890509
Misc: VBLK,METHOD BLANK,7002E5

Quant Rev: 6
Quant Time: 890509 14:56
Injected at: 890509 14:15
Dilution Factor: 1.00000

ID Fil : EVOAS::BD
Titl : CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.72	128.0	21520	50.00	UG/KG	87
13)	1,2-Dichloroethane-d4	11.28	65.0	46229	51.51	UG/KG	86
15)	*1,4-Difluorobenzene	18.65	114.0	73755	50.00	UG/KG	90
29)	*Chlorobenzene-d5	23.49	117.0	65920	50.00	UG/KG	94
35)	Toluene-d8	22.25	98.0	70027	49.74	UG/KG	97
40)	Bromofluorobenzene	27.84	95.0	68935	50.71	UG/KG	92

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK4

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF544

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenz ne	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK4

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF544

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
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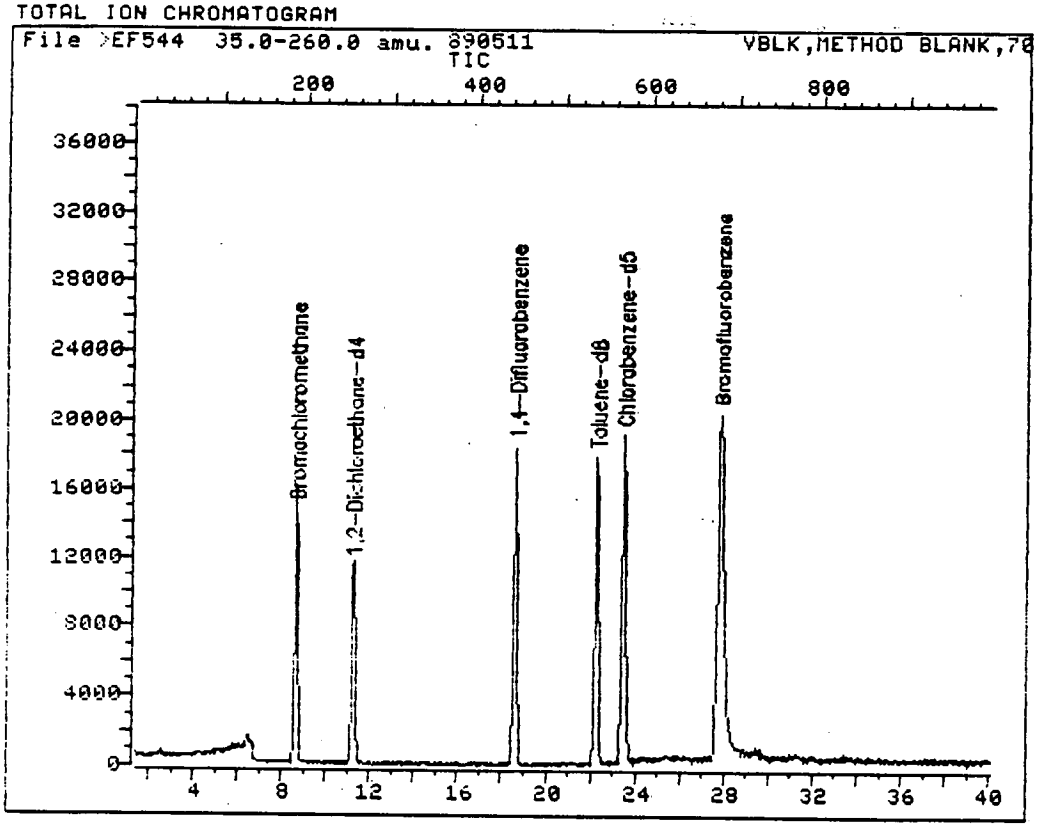
30.				

TOTAL ION CHROMATOGRAM



Data File: >EF544::D2 Quant Output File: ^EF544::QT
Name: 890511
Misc: VBLK,METHOD BLANK,7002E5

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 09:52
Injected at: 890511 09:11

QUANT REPORT

Operator ID: CARL
Output File: ^EF544::QT
Data File: >EF544::D2
Name: 890511
Misc: VBLK,METHOD BLANK,7002E5

Quant Rev: 6
Quant Time: 890511 09:52
Injected at: 890511 09:11
Dilution Factor: 1.00000

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	21248	50.00	UG/KG	94
13)	1,2-Dichloroethane-d4	11.25	65.0	44699	51.45	UG/KG	88
15)	*1,4-Difluorobenzene	18.62	114.0	74837	50.00	UG/KG	91
29)	*Chlorobenzene-d5	23.47	117.0	65137	50.00	UG/KG	96
35)	Toluene-d8	22.26	98.0	70504	50.86	UG/KG	97
40)	Bromofluorobenzene	27.81	95.0	68378	49.79	UG/KG	91

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

VBLK2

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF544

Level: (low/med) LOW Date Received: 0/ 0/ 0

% Moisture: not dec. 0. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorob nzene	5.	U
100-41-4	Ethylb nz ne	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xyl ne (total)	5.	U

FORM I VOA 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLK2

.ab Name: EAENG Contract: 68-01-7436

.ab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

latrix: (soil/water) SOIL Lab Sample ID: METHOD BLANK

ample wt/vol: 5.0 (g/mL) G Lab File ID: EF544

.evel: (low/med) LOW Date Received: 0/ 0/ 0

Moisture: not dec. 0. Date Analyzed: 5/11/89

olumn: (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
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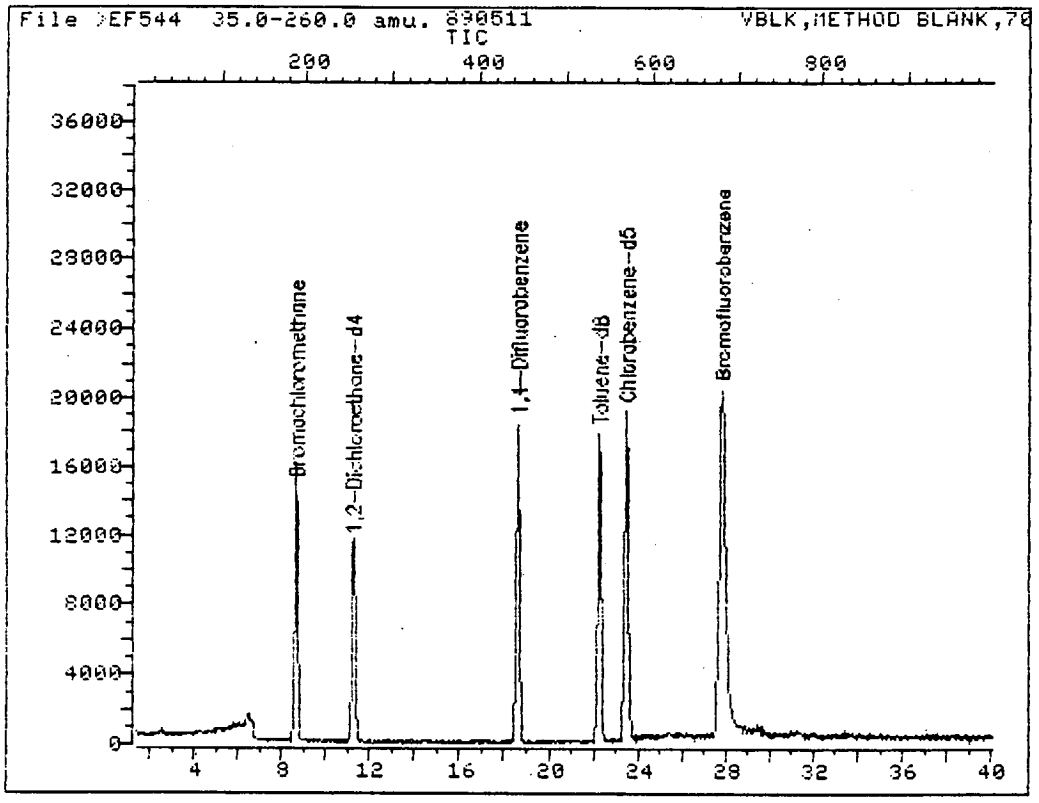
FORM I VOA-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EF544::D2 Quant Output File: ^EF544::QT
Name: 890511
Misc: VBLK,METHOD BLANK,7002E5

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 09:52
Injected at: 890511 09:11

QUANT REPORT

Operator ID: CARL
Output File: ^EF544::QT
Data File: >EF544::D2
Name: 890511
Misc: VBLK,METHOD BLANK,7002E5

Quant Rev: 6
Quant Time: 890511 09:52
Injected at: 890511 09:11
Dilution Factor: 1.00000

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.65	128.0	21248	50.00	UG/KG	94
13)	1,2-Dichloroethane-d4	11.25	65.0	44699	51.45	UG/KG	88
15)	*1,4-Difluorobenzene	18.62	114.0	74837	50.00	UG/KG	91
29)	*Chlorobenzene-d5	23.47	117.0	65137	50.00	UG/KG	96
35)	Toluene-d8	22.26	98.0	70504	50.86	UG/KG	97
40)	Bromofluorobenzene	27.81	95.0	68378	49.79	UG/KG	91

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLW3MS

Lab Name: EAENG Contract: 68-01-7436

Lab Cod : EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

Matrix: (soil/water) WATER Lab Sample ID: EA# 2205

Sample wt/vol: 5.0 (g/mL) ML Lab File ID: EF551

Level: (low/med) LOW Date Received: 5/ 8/89

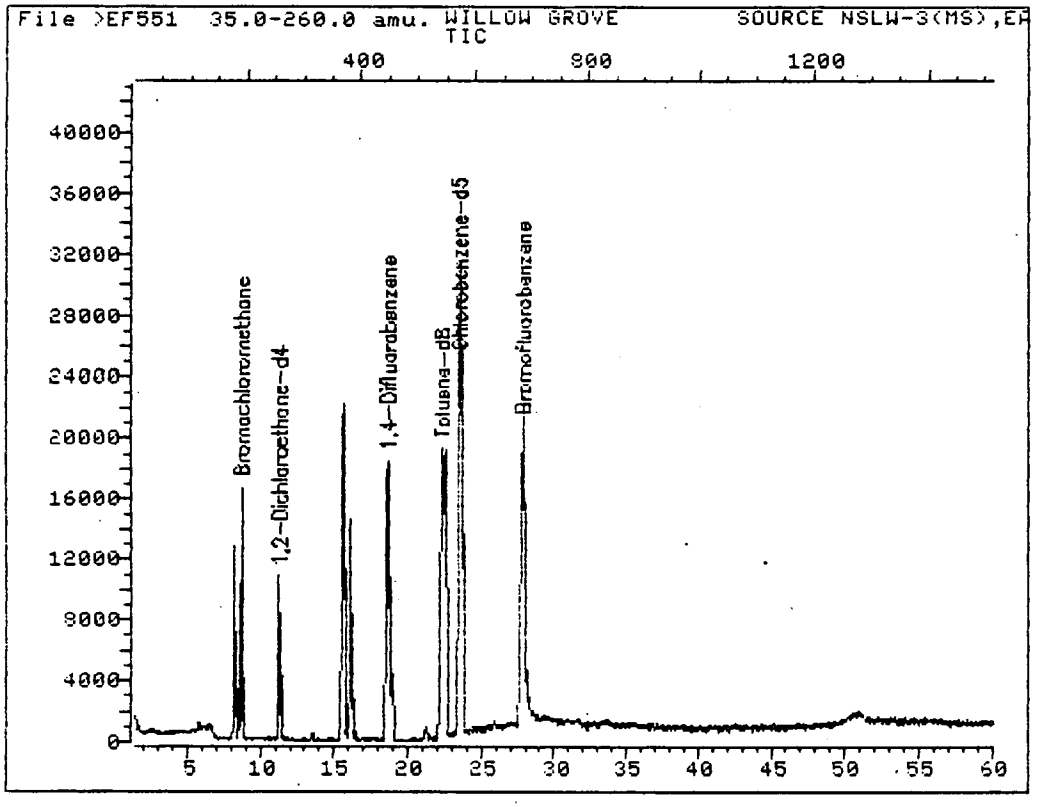
% Moisture: not dec. 100. Date Analyzed: 5/11/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	1.	J
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	5.	
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	10.	
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	1.	J
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA 1/87 R v.

TOTAL ION CHROMATOGRAM



Data File: >EF551::D2 Quant Output File: ^EF551::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-3(MS),EA#2205,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 17:17
Injected at: 890511 16:16

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890511 17:17
Output File: ^EF551::QT Injected at: 890511 16:16
Data File: >EF551::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: SOURCE NSLW-3(MS),EA#2205,7002E5,WATER,5.0ML

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.66	128.0	21630	50.00	UG/L	93
9)	1,1-Dichloroethene	8.20	96.0	23767	55.21	UG/L	94
13)	1,2-Dichloroethane-d4	11.26	65.0	43464	49.15	UG/L	83
15)	*1,4-Difluorobenzene	18.63	114.0	77442	50.00	UG/L	90
20)	Bromodichloromethane	13.47	83.0	1831	1.38	UG/L	87
23)	Trichloroethene	15.57	130.0	39451	56.62	UG/L	92
24)	Dibromochloromethane	16.23	129.0	6715	5.04	UG/L	99
26)	Benzene	16.07	78.0	62206	54.65	UG/L	93
28)	Bromoform	18.86	173.0	13246	9.68	UG/L	98
29)	*Chlorobenzene-d5	23.48	117.0	68188	50.00	UG/L	95
32)	Tetrachloroethene	21.23	164.0	921	1.27	UG/L	80
34)	Toluene	22.47	92.0	44355	54.87	UG/L	98
35)	Tolu ne-d8	22.28	98.0	73087	50.36	UG/L	93
36)	Chlorobenzene	23.60	112.0	68537	56.01	UG/L	94
40)	Bromofluorobenzene	27.86	95.0	72705	50.57	UG/L	87

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP MS

Lab Name: EAENG Contract: 68-01-7436

Lab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA# ~~2103~~ 2104 gn

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF523

Level: (low/med) LOW Date Received: 5/ 3/89

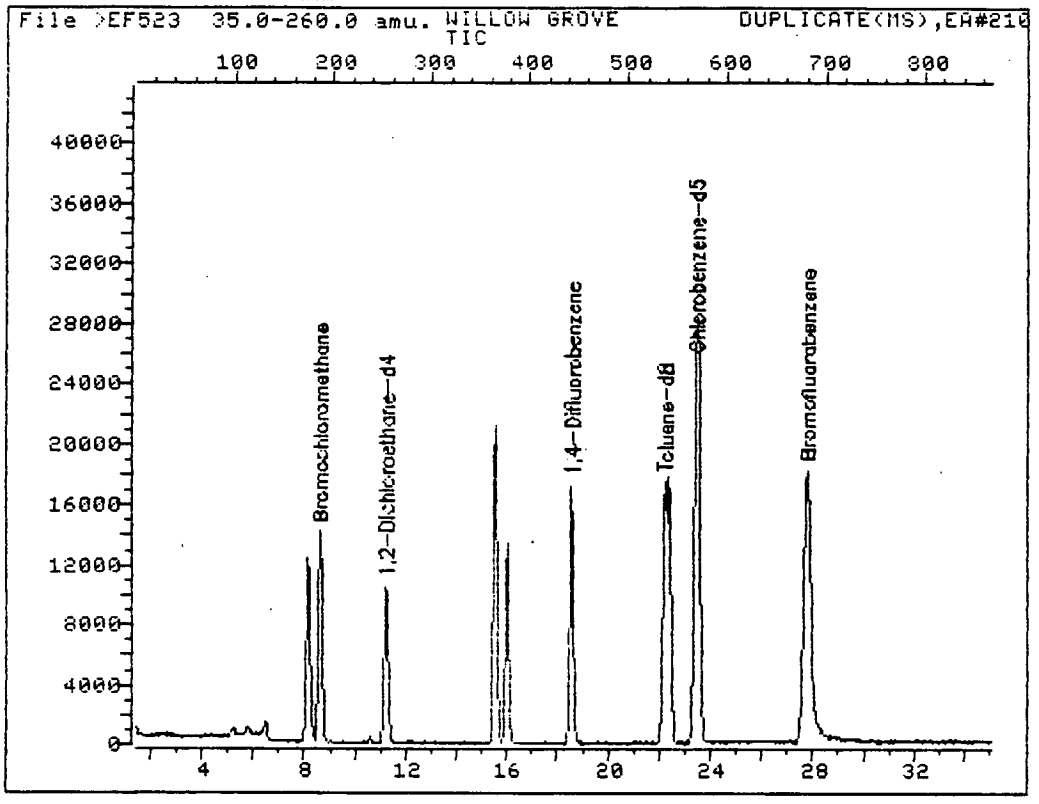
% Moisture: not dec. 19. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	4.	J
67-64-1	Acetone	22.	
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenz n	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylene (total)	6.	U

FORM I VOA 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EF523::D2 Quant Output File: ^EF523::QT
Name: WILLOW GROVE
Misc: DUPLICATE(MS),EA#210~~7~~4,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 17:39
Injected at: 890509 17:03

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890509 17:39
Output File: ^EF523::QT Injected at: 890509 17:03
Data File: >EF523::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: DUPLICATE(MS),EA#2103,7002E5,SOIL,5.0GM

ID File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.62	128.0	20136	50.00	UG/KG	94
6)	Methylene Chloride	5.78	84.0	1349	3.24	UG/KG	84
7)	Acetone	6.48	43.0	4577	17.83	UG/KG	96
9)	1,1-Dichloroethene	8.15	96.0	22149	61.80	UG/KG	93
13)	1,2-Dichloroethane-d4	11.21	65.0	42369	50.46	UG/KG	83
15)	*1,4-Difluorobenzene	18.58	114.0	69999	50.00	UG/KG	90
23)	Trichloroethene	15.56	130.0	36424	56.45	UG/KG	93
26)	Benzen	16.02	78.0	56890	58.18	UG/KG	91
29)	*Chlorobenzene-d5	23.43	117.0	61823	50.00	UG/KG	92
34)	Toluene	22.42	92.0	41378	57.23	UG/KG	98
35)	Toluen -d8	22.23	98.0	67022	50.76	UG/KG	99
36)	Chlorobenzene	23.55	112.0	62827	57.68	UG/KG	92
40)	Bromofluorobenzene	27.77	95.0	62900	49.34	UG/KG	92

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLW3MSD

.ab Name: EAENG Contract: 68-01-7436

.ab Code: EAENG Case No.: WILLOW SAS No.: SDG No.: FTAB3

latrix: (soil/water) WATER Lab Sample ID: EA# 2205

;ample wt/vol: 5.0 (g/mL) ML Lab File ID: EF552

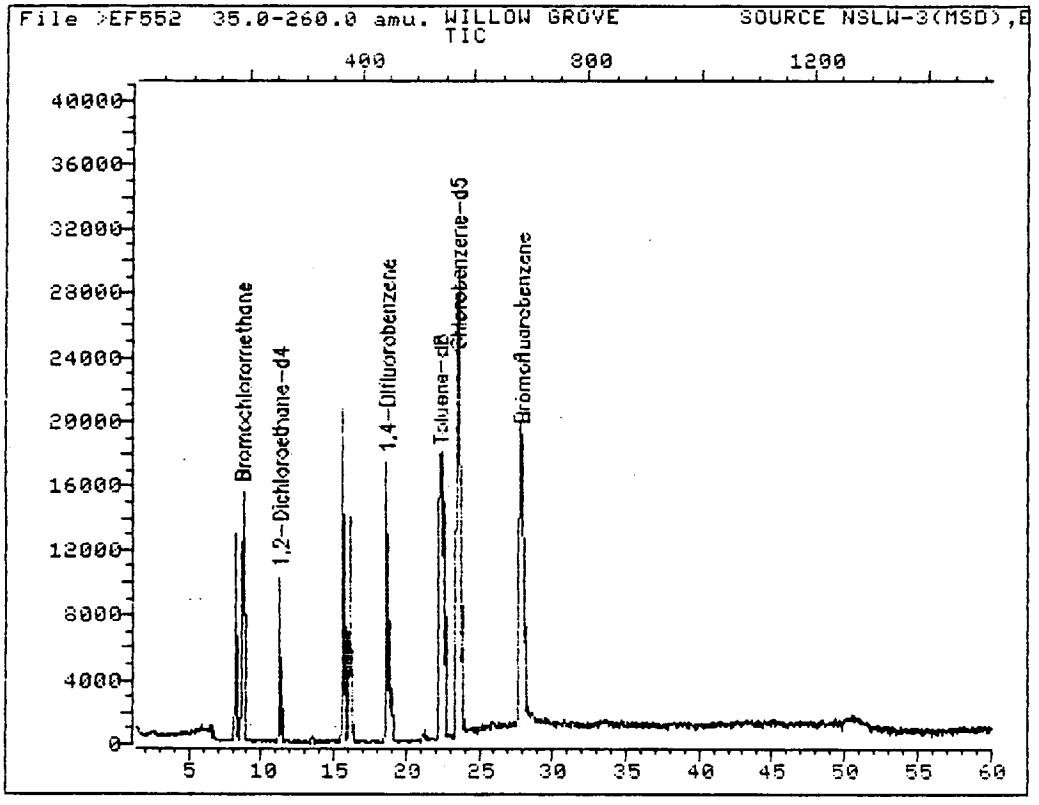
.evel: (low/med) LOW Date Received: 5/ 8/89

; Moisture: not dec. 100. Date Analyzed: 5/11/89

:olumn: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	5.	U
67-64-1	Acetone	10.	U
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	1.	J
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	5.	J
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	8.	
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	1.	J
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

TOTAL ION CHROMATOGRAM



Data File: >EF552::D2 Quant Output File: ^EF552::QT
Name: WILLOW GROVE
Misc: SOURCE NSLW-3(MSD),EA#2205,7002E5,WATER,5.0ML

Id File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

Operator ID: CARL
Quant Time: 890511 18:23
Injected at: 890511 17:22

QUANT REPORT

Operator ID: CARL Quant Rev: 6 Quant Time: 890511 18:23
Output File: ^EF552::QT Injected at: 890511 17:22
Data File: >EF552::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: SOURCE NSLW-3(MSD),EA#2205,7002E5,WATER,5.0ML

ID File: EVOA::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890511 08:55

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.67	128.0	20866	50.00	UG/L	89
9)	1,1-Dichloroethene	8.20	96.0	23070	55.55	UG/L	95
13)	1,2-Dichloroethane-d4	11.27	65.0	41143	48.23	UG/L	85
15)	*1,4-Difluorobenzene	18.64	114.0	73450	50.00	UG/L	90
20)	Bromodichloromethane	13.48	83.0	1654	1.31	UG/L	96
23)	Trichloroethene	15.57	130.0	36535	55.28	UG/L	92
24)	Dibromochloromethane	16.23	129.0	6150	4.87	UG/L	91
26)	Benzene	16.08	78.0	60166	55.73	UG/L	93
28)	Bromoform	18.87	173.0	10856	8.37	UG/L	93
29)	*Chlorobenzene-d5	23.48	117.0	63400	50.00	UG/L	95
32)	Tetrachloroethene	21.20	164.0	930	1.38	UG/L	99
34)	Toluene	22.48	92.0	41533	55.26	UG/L	95
35)	Toluene-d8	22.28	98.0	70086	51.94	UG/L	99
36)	Chlorobenzene	23.60	112.0	63158	55.52	UG/L	93
40)	Bromofluorobenzene	27.87	95.0	68184	51.01	UG/L	90

* Compound is ISTD

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUP MSD

Lab Nam : EAENG Contract: 68-01-7436

Lab Cod : EAENG Case No.: WILLOW SAS No.: SDG No.: NSLB1

Matrix: (soil/water) SOIL Lab Sample ID: EA # ~~2103~~ 21046k

Sample wt/vol: 5.0 (g/mL) G Lab File ID: EF524

Level: (low/med) LOW Date Received: 5/ 3/89

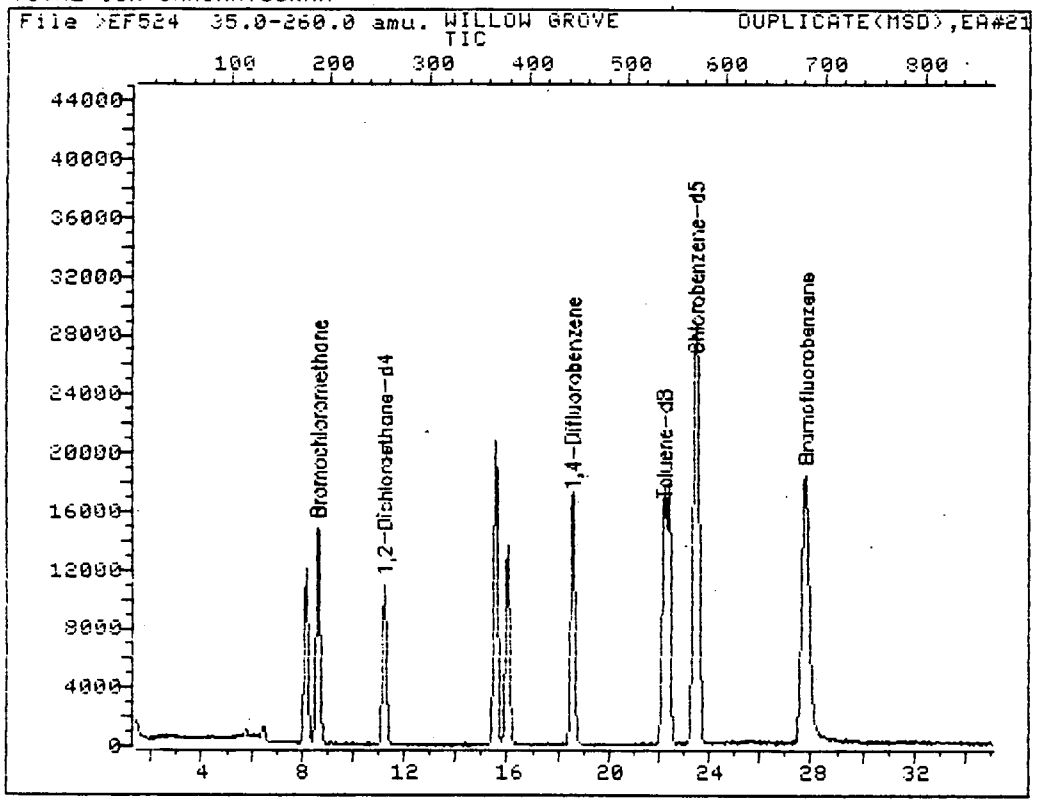
% Moisture: not dec. 19. Date Analyzed: 5/ 9/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12.	U
74-83-9	Bromomethane	12.	U
75-01-4	Vinyl Chloride	12.	U
75-00-3	Chloroethane	12.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	20.	
75-15-0	Carbon Disulfide	6.	U
75-35-4	1,1-Dichloroethene		
75-34-3	1,1-Dichloroethane	6.	U
540-59-0	1,2-Dichloroethene (total)	6.	U
67-66-3	Chloroform	6.	U
107-06-2	1,2-Dichloroethane	6.	U
78-93-3	2-Butanone	12.	U
71-55-6	1,1,1-Trichloroethane	6.	U
56-23-5	Carbon Tetrachloride	6.	U
108-05-4	Vinyl Acetate	12.	U
75-27-4	Bromodichloromethane	6.	U
78-87-5	1,2-Dichloropropane	6.	U
10061-01-5	cis-1,3-Dichloropropene	6.	U
79-01-6	Trichloroethene		
124-48-1	Dibromochloromethane	6.	U
79-00-5	1,1,2-Trichloroethane	6.	U
71-43-2	Benzene		
10061-02-6	trans-1,3-Dichloropropene	6.	U
75-25-2	Bromoform	6.	U
108-10-1	4-Methyl-2-Pentanone	12.	U
591-78-6	2-Hexanone	12.	U
127-18-4	Tetrachloroethene	6.	U
79-34-5	1,1,2,2-Tetrachloroethane	6.	U
108-88-3	Toluene		
108-90-7	Chlorobenzene		
100-41-4	Ethylb nzene	6.	U
100-42-5	Styrene	6.	U
1330-20-7	Xylen (total)	6.	U

FORM I VOA 1/87 Rev.

TOTAL ION CHROMATOGRAM



Data File: >EF524::D2 Quant Output File: ^EF524::QT
Name: WILLOW GROVE
Misc: DUPLICATE(MSD),EA#210~~3~~4,7002E5,SOIL,5.0GM

Id File: EVOAS::BD
Title: CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

Operator ID: CARL
Quant Time: 890509 18:19
Injected at: 890509 17:43

QUANT REPORT

Operator ID: CARL
Output File: ^EF524::QT
Data File: >EF524::D2
Name: WILLOW GROVE
Misc: DUPLICATE(MSD),EA#2103,7002E5,SOIL,5.0GM

Quant Rev: 6
Quant Time: 890509 18:19
Injected at: 890509 17:43
Dilution Factor: 1.00000

ID File: EVOAS::BD
Titl : CLP protocol-5pt calibration, 7002E5
Last Calibration: 890509 13:58

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*Bromochloromethane	8.62	128.0	20151	50.00	UG/KG	87
6)	M thylene Chloride	5.78	84.0	1005	2.41	UG/KG	95
7)	Acetone	6.48	43.0	4258	16.57	UG/KG	93
9)	1,1-Dichloroethene	8.15	96.0	21495	59.93	UG/KG	94
13)	1,2-Dichloroethane-d4	11.21	65.0	43399	51.65	UG/KG	84
15)	*1,4-Difluorobenzene	18.54	114.0	71553	50.00	UG/KG	90
23)	Trichloroethene	15.56	130.0	35704	54.13	UG/KG	87
26)	Benz ne	16.02	78.0	56686	56.71	UG/KG	94
29)	*Chlorobenzene-d5	23.43	117.0	63237	50.00	UG/KG	97
34)	Toluene	22.38	92.0	40375	54.59	UG/KG	94
35)	Toluene-d8	22.19	98.0	66755	49.43	UG/KG	99
36)	Chlorobenzene	23.55	112.0	62648	56.23	UG/KG	91
40)	Bromofluorobenzene	27.77	95.0	64992	49.84	UG/KG	87

* Compound is ISTD

E. Quality Assurance Summary

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove Analysis: TCL volatiles

EA Laboratories Report No. 890292 Method: U.S. EPA-CLP

Reviewed by: Tony [illegible] Date: 5-24-89

1. The 10-day holding time requirement from sample collection to analysis was met for all samples.

   X Yes ____ No

2. The 12-hour tuning period for BFB was met for all samples.

   ____ Yes X No

3. Initial calibration criteria were met for all samples: the RSD is ≤30% for all CCC compounds, and the RRF for SPCC compounds is >0.300 (0.250 for bromoform).

   X Yes ____ No

4. Continuing calibration criteria were met for all samples: the response factor percent deviation from the mean initial calibration response factor for all CCC compounds was ≤25%, and the RRF for SPCC compounds is >0.300 (0.250 for bromoform).

   X Yes ____ No

5. Surrogate recovery limits were met for all samples.

   X Yes ____ No

6. MS and MSD criteria were met for all samples.

   X Yes ____ No

7. Method blank criteria were met for all samples: common laboratory contaminants are ≤5X CRQL, all other compounds are <CRQL.

   X Yes ____ No

(Revised 8 May 1989)

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: William Grove Analysis: TCL volatiles

EA Laboratories Report No. 890292 Method: U.S. EPA-CLP

Reviewed by: [illegible] Date: 5-22-89

8. Laboratory control sample criteria were met for all samples.

✓ Yes ____ No

9. Field and equipment blanks: no target compounds were detected the samples at concentrations <5X the concentration found in the highest associated blank.

✓ Yes ____ No

Comments: ① Trip Blank ea # 2207 was inject 31 min pass 12 hr tune time

② This summary is for ea #'s 2150, 2152, 2154, 2156, 2158, 2160, 2205, 2206, 2207

(Revised 8 May 1989)

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove

Analysis: TCL volatiles

EA Laboratories Report No. 890292

Method: U.S. EPA-CLP

Reviewed by: Tony [illegible]

Date: 5-24-89

1. The 10-day holding time requirement from sample collection to analysis was met for all samples.

   X Yes ____ No

2. The 12-hour tuning period for BFB was met for all samples.

   X Yes ____ No

3. Initial calibration criteria were met for all samples: the RSD is ≤30% for all CCC compounds, and the RRF for SPCC compounds is >0.300 (0.250 for bromoform).

   X Yes ____ No

4. Continuing calibration criteria were met for all samples: the response factor percent deviation from the mean initial calibration response factor for all CCC compounds was ≤25%, and the RRF for SPCC compounds is >0.300 (0.250 for bromoform).

   X Yes ____ No

5. Surrogate recovery limits were met for all samples.

   X Yes ____ No

6. MS and MSD criteria were met for all samples.

   X Yes ____ No

7. Method blank criteria were met for all samples: common laboratory contaminants are ≤5X CRQL, all other compounds are <CRQL.

   X Yes ____ No

(Revised 8 May 1989)

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove Analysis: TCL volatiles

EA Laboratories Report No. 890292 Method: U.S. EPA-CLP

Reviewed by: Tony Lick Date: 5-24-89

8. Laboratory control sample criteria were met for all samples.

X Yes _____ No

9. Field and equipment blanks: no target compounds were detected the samples at concentrations <5X the concentration found in the highest associated blank.

NA _____ Yes _____ No

Comments: Report for EA # 2086, 2088, 2090, 2092, 2094, 2096, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2107

(Revised 8 May 1989)

4. SEMIVOLATILE DATA

A. QC Summary

WATER SURROGATE PERCENT RECOVERY SUMMARY

Case No. WILLOW GROVE / ~~MICHAUDSVILLE~~ Contract Laboratory EA LABORATORIES Contract No. 10388.03

SMO TRAFFIC NO.	VOLATILE: TOLUENE-D8 (88-110)	VOLATILE: BFB (86-115)	VOLATILE: 1,2 DICHLORO-ETHANE-D4 (76-114)	SEMI-VOLATILE: NITRO-BENZENE-D5 (35-114)	SEMI-VOLATILE: 2-FLUORO-BIPHENYL (43-116)	SEMI-VOLATILE: TERPHENYL-D14 (33-141)	SEMI-VOLATILE:	SEMI-VOLATILE:	SEMI-VOLATILE: PHENOL-D5 (10-94)	SEMI-VOLATILE: 2-FLUORO-PHENOL (21-100)	SEMI-VOLATILE: 2,4,6 TRIBROMO-PHENOL (10-123)	PESTICIDE: DIBUTYL-CHLORENDATE (24-154) *
BL #710 (>FC308)				81%	85%	100%			49%	52%	68%	
EA #2158 (>FC311)				77%	78%	90%			57%	130%*	45%	
EA #2148 (>FC316)				86%	86%	91%			69%	61%	70%	

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

* ADVISORY LIMITS ONLY

Volatiles: _____ out of _____ ; outside of QC limits

Semi-Volatiles: 1 out of 18 ; outside of QC limits

Pesticides: _____ out of _____ ; outside of QC limits

Comments:

FORM II 7/85

2C

WATER SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EA Laboratories Contract: Willow Grove #10388.03

Lab Code: EAENG Case No.: _____ SAS No.: _____ SDG No.: _____

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
MSTD# 370 01	MSTD# 370	66	81	94	54	52	105		0
BLK #698 02	BLANK #698	68	83	100	33	28	55		0
EA# 2098 03	RINSATE#1 95C	69	84	133	36	29	59		0
EA# 2099 04	RINSATE#2 95C	61	73	132	32	27	58		0
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06									
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		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(35-114)
S2 (FBP)	= 2-Fluorobiphenyl	(43-116)
S3 (TPH)	= Terphenyl-d14	(33-141)
S4 (PHL)	= Phenol-~~d6~~ d5	(10-94)
S5 (2FP)	= 2-Fluorophenol	(21-100)
S6 (TBP)	= 2,4,6-Tribromophenol	(10-123)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

page 1 of 1

FORM II SV-1

1/87 Rev.

SOIL SURROGATE PERCENT RECOVERY SUMMARY

Cas No. Willow Grove/~~Mechanicsville~~ Contract Laboratory EA Laboratories Contract No. 10388.03

Low ✓ Medium _____

SMO TRAFFIC NO.	VOLATILE: TOLUENE-D8 (81-117)	VOLATILE: BFB (74-121)	VOLATILE: 1,2 DICHLORO-ETHANE-D4 (70-121)	SEMI-VOLATILE: NITRO-BENZENE-D5 (23-120)	SEMI-VOLATILE: 2-FLUORO-BIPHENYL (30-116)	SEMI-VOLATILE: TERPHENYL-D14 (18-137)			SEMI-VOLATILE: PHENOL-D5 (24-113)	SEMI-VOLATILE: 2-FLUORO-PHENOL (25-121)	SEMI-VOLATILE: 2,4,6 TRIBROMO-PHENOL (19-122)	PESTICIDE: DIBUTYL-CHLORENDATE** (20-150)
Blank #213 (>FC308)				71%	72%	81%			58%	53%	65%	
BL #710 (>FC305)				81%	85%	100%			49%	52%	68%	ND 6-10-89
EA #2155 (>FC309)				56%	72%	86%			54%	57%	71%	
EA #2157 (>FC310)				69%	73%	89%			54%	46%	69%	
EA #2158 (>FC311)				77%	78%	90%			57%	130%*	45%	ND 6-10-89
BL #696 (>FC312)				72%	71%	86%			57%	49%	69%	
EA #2087 (>FC313)				72%	74%	87%			55%	46%	68%	
EA #2089 (>FC314)				72%	71%	83%			57%	48%	65%	
EA #2091 (>FC315)				68%	76%	81%			53%	47%	58%	
EA #2148 (>FC316)				86%	86%	91%			68%	61%	70%	ND 6-10-89

* VALUES ARE OUTSIDE OF CONTRACT REQUIRED QC LIMITS

** ADVISORY LIMITS ONLY

Volatiles: _____ out of _____ ; outside of QC limits

Semi-Volatiles: 0 out of 42 ; outside of QC limits

Pesticides: _____ out of _____ ; outside of QC limits

7/85

Comments: _____

FORM II

2D

SOIL SEMIVOLATILE SURROGATE RECOVERY

Lab Name: EA Laboratories Contract: ~~SWDD RI~~ ~~Willow Grove~~ 10388.03

Lab Code: EAENG Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Level: (low/med) _____

	EPA SAMPLE NO.	S1 (NBZ) #	S2 (FBP) #	S3 (TPH) #	S4 (PHL) #	S5 (2FP) #	S6 (TBP) #	OTHER	TOT OUT
EA# 2097 01	NSLB-6 Comp	59	64	83	53	43	65		
EA# 2104 02	Dup (MS)	77	81	102	66	53	80		
EA# 2104 MS 03	Dup MS (MS)	76	77	98	61	53	84		
EA# 2104 MSD 04	Dup MS (MSD)	68	71	93	56	49	84		
EA# 2104 05	Dup 95C #1	71	76	93	62	48	77		
EA# 2106 06	FTAB-1 Comp	81	92	105	69	55	91		
EA# 2108 07	FTAB-2 Comp	78	86	107	58	39	62		
EA# MSTO# 369 08	MSTO #369	72	79	103	62	51	95		
EA# 2093 09	NSLB-4 Comp	63	67	70	59	57	82		
EA# 2092 10	NSLB-5 Comp	59	65	74	52	42	87		
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		QC LIMITS
S1 (NBZ)	= Nitrobenzene-d5	(23-120)
S2 (FBP)	= 2-Fluorobiphenyl	(30-115)
S3 (TPH)	= Terphenyl-d14	(18-137)
S4 (PHL)	= Phenol-d6	(24-113)
S5 (2FP)	= 2-Fluorophenol	(25-121)
S6 (TBP)	= 2,4,6-Tribromophenol	(19-122)

Column to be used to flag recovery values
* Values outside of contract required QC limits
D Surrogates diluted out

page 1 of 1

FORM II SV-2

1/87 Rev.

3D

SOIL SEMIVOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA Laboratories Contract: ~~Willow Grove~~ FL # 10388.03

Lab Code: EAENG Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Matrix Spike - EPA Sample No.: Dup MS EA#3103 Level:(low/med) _____

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC #	QC LIMITS REC.
Phenol	200	—	121	61	26- 90
2-Chlorophenol	200	—	133	67	25-102
1,4-Dichlorobenzene	100	—	70	70	28-104
N-Nitroso-di-n-prop.(1)	100	—	86	86	41-126
1,2,4-Trichlorobenzene	100	—	78	78	38-107
4-Chloro-3-methylphenol	200	—	149	75	26-103
Acenaphthene	100	—	85	85	31-137
4-Nitrophenol	200	—	220	110	11-114
2,4-Dinitrotoluene	100	—	81	81	28- 89
Pentachlorophenol	200	—	197	99	17-109
Pyrene	100	—	110	110	35-142

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC #	% RPD #	QC LIMITS RPD	QC LIMITS REC.
Phenol	200	117	59	3	35	26- 90
2-Chlorophenol	200	124	62	8	50	25-102
1,4-Dichlorobenzene	100	62	62	6	27	28-104
N-Nitroso-di-n-prop.(1)	100	78	78	10	38	41-126
1,2,4-Trichlorobenzene	100	71	71	9	23	38-107
4-Chloro-3-methylphenol	200	150	75	0	33	26-103
Acenaphthene	100	78	78	9	19	31-137
4-Nitrophenol	200	194	97	13	50	11-114
2,4-Dinitrotoluene	100	72	72	12	47	28- 89
Pentachlorophenol	200	188	94	5	47	17-109
Pyrene	100	105	105	5	36	35-142

(1) N-Nitroso-di-n-propylamine

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: ~~22~~ 0 out of 22 outside limits

COMMENTS: _____

FORM III SV-2 1/87 Rev.

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA Laboratories Contract: 10388.03

Lab Code: EAENG Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Lab File ID: >FC450 Lab Sample ID: BLK 698

Date Extracted: 5/4/89 Extraction: (SepF/Cont/Sonc) ~~Sonx~~ CONT.

Date Analyzed: 6/16/89 Time Analyzed: 00:40

Matrix: (soil/water) Water Level: (low/med) Low

Instrument ID: #6(F)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	RINSATE#1 9SL	EA# 2098	>FC451	6/16/89
02	RINSATE#2 9SL	EA# 2099	>FC452	6/16/89
03	MSTDD#370	MSTDD#370	>FC449	6/15/89
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COMMENTS:

page __ of __

FORM IV SV

1/87 Rev

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA Laboratories Contract: ~~Willow Grove~~ 10388.03 JEH

Lab Code: EAENG Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Lab File ID: >FC 312 Lab Sample ID: Blank #696

Date Extracted: 5-4-89 Extraction: (SepF/Cont/Sonc) Cont

Date Analyzed: 5-31-89 Time Analyzed: 03:30

Matrix: (soil/water) Soil Level: (low/med) Low

Instrument ID: FC

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	
01	EA# 2087	NSLB-1 Comp.	>FC 313	5-31-89	
02	EA# 2089	NSLB-2 Comp	>FC 314	5-31-89	
03	EA# 2091	NSLB-3 Comp	>FC 315	5-31-89	
04	EA# 2093	NSLB-4 Comp	>FC 419	6-13-89	
05	EA# 2095	NSLB-5 Comp	>FC 420	6-13-89	
06	EA# 2097	NSLB-6 Comp	>FC ~~421~~ 428	6-13-89	
07	~~EA# 2103~~	~~Duplicate Matrix Spike~~	~~>FC 429~~ 429	~~6-14-89~~	KLL
08	EA# 2104	Duplicate MS #1	>FC 432	6-14-89	
09	~~EA# 2105~~	~~FTAB-1 Comp~~	~~>FC 433~~	~~6-14-89~~	KLL
10	~~EA# 2106~~	~~FTAB-2 Comp~~	~~>FC 434~~	~~6-14-89~~	KLL
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COMMENTS: _____

page __ of __

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA LABORATORIES Contract: ~~WILLOW GROVE~~ 10388.03 DEH

Lab Code: EA ENG Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Lab File ID: 7FC308 Lab Sample ID: EA# 710

Date Extracted: 5-5-89 Extraction: (SepF/Cont/Sonc) ____

Date Analyzed: 5-30-89 Time Analyzed: 23:56

Matrix: (soil/water) H_2O Level: (low/med) low

Instrument ID: F6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EA# 2158	RINSATE-1 FTB H_2O	7FC 311	5-31-89
02	~~EA# 2148~~	~~Mechanicsville L.F. Stor Tank~~	~~7FC 316~~	~~5-31-89~~
03				
04				
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30				

COMMENTS:

page __ of __

4B

SEMIVOLATILE METHOD BLANK SUMMARY

Lab Name: EA LABORATORIES Contract: ~~Willow Grove~~ 10388.03 DEH

Lab Code: EA ENG Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Lab File ID: >FC302 Lab Sample ID: BLANK # 713

Date Extracted: 5-5-89 Extraction: (SepF/Cont/Sonc) CONT

Date Analyzed: 5-30-89 Time Analyzed: 23:03

Matrix: (soil/water) SOIL Level: (low/med) LOW

Instrument ID: P6

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
01	EA# 2155	BLD330B-1	>FC309	5-31-89
02	EA# 2157	BLD330 B-2 Comp	>FC 310	5-31-89
03				
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COMMENTS:

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Case No.: Willow Grove Contractor: EA Laboratories Contract No.: 10388.03

Instrument ID: ~~#4 (D)~~ gc# ~~EF (CG)~~ Date: 05/25/89 Time: 22:35

Lab ID: >FC269-137 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	58.78	58.78	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	68.97	68.97	Ok
70	Less than 2% of mass 69	.31	.45	Ok
127	40-60% of mass 198	43.54	43.54	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.55	6.55	Ok
275	10-30% of mass 198	21.10	21.10	Ok
365	Greater than 1% of mass 198	2.23	2.23	Ok
441	0-100% of mass 443	9.57	73.83	Ok
442	Greater than 40% of mass 198	66.76	66.76	Ok
443	17-23% of mass 442	12.96	19.42	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
BNA 50 ppm STD MIX	>FC 271	5-26-89	00:27
BNA 100 ppm STD MIX	>FC 272	↓	01:26
BNA 120 ppm STD MIX	>FC 273		02:17
BNA 80 ppm STD MIX	>FC 274		03:09
BNA 20 ppm STD MIX	>FC 275		04:02

FORM V

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Case No.: WILLOW GROVE Contractor: EA Laboratories Contract No.: 10358.03

Instrument ID: ~~#4 (D)~~ --#F-(60) Date: 05/30/89 Time: 19:42

Lab ID: >FC304-134 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	54.23	54.23	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	65.11	65.11	Ok
70	Less than 2% of mass 69	.83	1.27	Ok
127	40-60% of mass 198	44.51	44.51	Ok
197	L ss than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.72	6.72	Ok
275	10-30% of mass 198	23.88	23.88	Ok
365	Greater than 1% of mass 198	2.60	2.60	Ok
441	0-100% of mass 443	12.30	75.53	Ok
442	Greater than 40% of mass 198	82.69	82.69	Ok
443	17-23% of mass 442	16.29	19.70	Ok

Thi performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
BLANK # 713	>FC307	5-30-89	23:03
BLANK # 710	>FC308	↓	23:56
EA# 2155	>FC 309	5-31-89	00:48
EA# 2157	>FC 310		01:41
EA# 2158	>FC 311		02:33
BL# 696	>FC 312		03:30
EA# 2087	>FC 313		04:22
EA# 2089	>FC 314		05:15
EA# 2091	>FC 315		06:07
~~EA# 2148~~	~~>FC 316~~		~~07:00~~
BNA 50ppm std STD#1581	>FC 306	5/30/89	21:27

FORM V

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Case No.: Willow Grove Contractor: EA Laboratories Contract No.: 10388.03

Instrument ID: ~~#4 (D)~~ F6 Date: 06/13/89 Time: 09:44

Lab ID: >FC413-113 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	48.36	48.36	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	59.00	59.00	Ok
70	Less than 2% of mass 69	.19	.33	Ok
127	40-60% of mass 198	40.87	40.87	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.88	6.88	Ok
275	10-30% of mass 198	22.11	22.11	Ok
365	Greater than 1% of mass 198	2.60	2.60	Ok
441	0-100% of mass 443	13.36	70.95	Ok
442	Greater than 40% of mass 198	96.55	96.55	Ok
443	17-23% of mass 442	18.84	19.51	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
BNA 50 ppm STD MIX	STD # 1404 >FC414	6-13-89	10:26
BNA 160 ppm STD MIX	STD # 1401 >FC415		11:28
BNA 120 ppm STD MIX	STD # 1402 >FC416		12:01
BNA 80 ppm STD MIX	STD # 1403 >FC417		13:02
BNA 20 ppm STD MIX	STD # 1405 >FC418		13:54
NSLB-4 Comp -	EA# 2093		15:19
NSLB-5 Comp	EA# 2095		16:11

FORM V

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Case No.: Willow Grove Contractor: EA Laboratories Contract No.: 10388.03

Instrument ID: #4 (D) Date: 06/13/89 Time: 21:43

Lab ID: >FC426-113 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	56.21	56.21	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	66.74	66.74	Ok
70	Less than 2% of mass 69	0.00	0.00	Ok
127	40-60% of mass 198	43.61	43.61	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.68	6.68	Ok
275	10-30% of mass 198	20.47	20.47	Ok
365	Greater than 1% of mass 198	2.41	2.41	Ok
441	0-100% of mass 443	9.53	79.35	Ok
442	Greater than 40% of mass 198	67.74	67.74	Ok
443	17-23% of mass 442	12.02	17.74	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
50 ppm STD MIX	BRA STD #1399, >FC427	6/13/89	22:28
NSLB-6 Comp	EA #3097, >FC428	↓	23:46
~~Dup MS~~	~~EA #2103, >FC429~~	~~6/14/89~~	~~00:44~~
Dup MS (MS)	EA #2103 (MS), >FC430	EA #2104 MS	01:36
Dup MS (MSD)	EA #2103 (MSD), >FC431	EA #2104 MSD	02:22
Dup 956 #1	EA #2104, >FC432		03:19
~~FTAB-1 Comp.~~	~~EA #2106, >FC433~~		~~04:12~~
~~FTAB-2 Comp.~~	~~EA #2108, >FC434~~		~~05:04~~
MSTD #369	MSTD #369, >FC435		05:57

FORM V

GC/MS PERFORMANCE STANDARD

Decafluorotriphenylphospine (DFTPP)

Case No.: Willow Grove ~~SWDD RF~~ Contractor: EA Laboratories Contract No.: ~~10880.05~~ 10388.05

Instrument ID: #4 (D) Date: 06/15/89 Time: 18:13

Lab ID: >FC443-112 Data Release Authorized By :

m/z	Ion Abundance Criteria	% Relative Abundance Base Peak	Appropriate Peak	Status
51	30-60% of mass 198	50.80	50.80	Ok
68	Less than 2% of mass 69	0.00	0.00	Ok
69	(reference only)	64.06	64.06	Ok
70	Less than 2% of mass 69	.23	.36	Ok
127	40-60% of mass 198	43.32	43.32	Ok
197	Less than 1% of mass 198	0.00	0.00	Ok
198	Base peak, 100% relative abundance	100.00	100.00	Ok
199	5-9% of mass 198	6.97	6.97	Ok
275	10-30% of mass 198	20.51	20.51	Ok
365	Greater than 1% of mass 198	2.43	2.43	Ok
441	0-100% of mass 443	9.96	76.37	Ok
442	Greater than 40% of mass 198	68.66	68.66	Ok
443	17-23% of mass 442	13.05	19.00	Ok

This performance tune applies to the following samples, blanks and standards:

Sample ID	Lab ID	Date of Analysis	Time of Analysis
BNA 50 ppm STD MIX	STD#1399 >FC444	6-15-89	18:49
BNA 160 ppm STD MIX	STD#1401 >FC445		20:12
BNA 120 ppm STD MIX	STD#1402 >FC446		21:04
BNA 80 ppm STD MIX	STD#1403 >FC447		21:57
BNA 20 ppm STD MIX	STD#1405 >FC448		22:49
MSDD	MSDD#370		23:47
BLANK#698	BLANK#698	6-16-89	00:40
RINSATE#1 95L H_2O	EA#2098		01:32
RINSATE#2 95L H_2O	EA#2099		02:24

FORM V

B. Sample Data

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#2087,NSLB-
Comp

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/05/89
Date Analyzed: 5/31/89 4:22
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup _ Yes / No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction / Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1100.	U
111-44-4	bis(2-Chloroethyl)ether	1100.	U
95-57-8	2-Chlorophenol	1100.	U
541-73-1	1,3-Dichlorobenzene	1100.	U
106-46-7	1,4-Dichlorobenzene	1100.	U
100-51-6	Benzyl Alcohol	1100.	U
95-50-1	1,2-Dichlorobenzene	1100.	U
95-48-7	2-Methylphenol	1100.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1100.	U
106-44-5	4-Methylphenol	1100.	U
621-64-7	N-Nitroso-Di-n-propylamine	1100.	U
67-72-1	Hexachloroethane	1100.	U
98-95-3	Nitrobenzene	1100.	U
78-59-1	Isophorone	1100.	U
88-75-5	2-Nitrophenol	1100.	U
105-67-9	2,4-Dimethylphenol	1100.	U
65-85-0	Benzoic Acid	120.	J
111-91-1	bis(2-Chloroethoxy)methane	1100.	U
120-83-2	2,4-Dichlorophenol	1100.	U
120-82-1	1,2,4-Trichlorobenzene	1100.	U
91-20-3	Naphthalene	1100.	U
106-47-8	4-Chloroaniline	1100.	U
87-68-3	Hexachlorobutadiene	1100.	U
59-50-7	4-Chloro-3-methylphenol	1100.	U
91-57-6	2-Methylnaphthalene	1100.	U
77-47-4	Hexachlorocyclopentadiene	1100.	U
88-06-2	2,4,6-Trichlorophenol	1100.	U
95-95-4	2,4,5-Trichlorophenol	5600.	U
91-58-7	2-Chloronaphthalene	1100.	U
88-74-4	2-Nitroaniline	5600.	U
131-11-3	Dimethylphthalate	1100.	U
208-96-8	Acenaphthylene	1100.	U
99-09-2	3-Nitroaniline	5600.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1100.	U
51-28-5	2,4-Dinitrophenol	5600.	U
100-02-7	4-Nitrophenol	5600.	U
132-64-9	Dibenzofuran	1100.	U
121-14-2	2,4-Dinitrotoluene	1100.	U
606-20-2	2,6-Dinitrotoluene	1100.	U
84-66-2	Diethylphthalate	1100.	U
7005-72-3	4-Chlorophenyl-phenylether	1100.	U
86-73-7	Fluorene	1100.	U
100-01-6	4-Nitroaniline	1100.	U
534-52-1	4,6-Dinitro-2-methylphenol	5600.	U
86-30-6	N-Nitrososdiphenylamine (1)	1100.	U
101-55-3	4-Bromophenyl-phenylether	1100.	U
118-74-1	Hexachlorobenzene	1100.	U
87-86-5	Pentachlorophenol	5600.	U
85-01-8	Phenanthrene	1100.	U
120-12-7	Anthracene	1100.	U
84-74-2	Di-n-Butyl phthalate	1100.	U
206-44-0	Fluoranthene	1100.	U
129-00-0	Pyrene	1100.	U
85-68-7	Butylbenzylphthalate	1100.	U
91-94-1	3,3'-Dichlorobenzidine	2300.	U
56-55-3	Benzo(a)Anthracene	1100.	U
117-81-7	bis(2-Ethylhexyl)phthalate	270.	J
218-01-9	Chrysene	1100.	U
117-84-0	Di-n-Octyl phthalate	1100.	U
205-99-2	Benzo(b)Fluoranthene	1100.	U
207-08-9	Benzo(k)Fluoranthene	1100.	U
50-32-8	Benzo(a)Pyrene	1100.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1100.	U
53-70-3	Dibenzo(a,h)Anthracene	1100.	U
191-24-2	Benzo(g,h,i)Perylene	1100.	U

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB-1 Comp

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: _____ Case No.: Willow Ge. SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2087

Sample wt/~~vol~~: 10.34 (g/~~mL~~) ____ Lab File ID: >FC 313

Level: (1 w/med) LO Date Received: 5/3/89

% Moisture: not dec. 14.7 dec. _____ Date Extracted: 5/4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 5/31/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: _____

Number TICs found: 5

CONCENTRATION UNITS:
(~~ug/L or~~ ug/Kg) _____

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. --	(UNKNOWN)	3.75	810 J	
2. —	(UNKNOWN)	4.21	570 J	
3. 57-10-3	Hexadecanoic Acid	22.90	790 J	
4. —	(UNKNOWN)	28.34	560 J	
5. —	(UNKNOWN)	29.48	1200 J	
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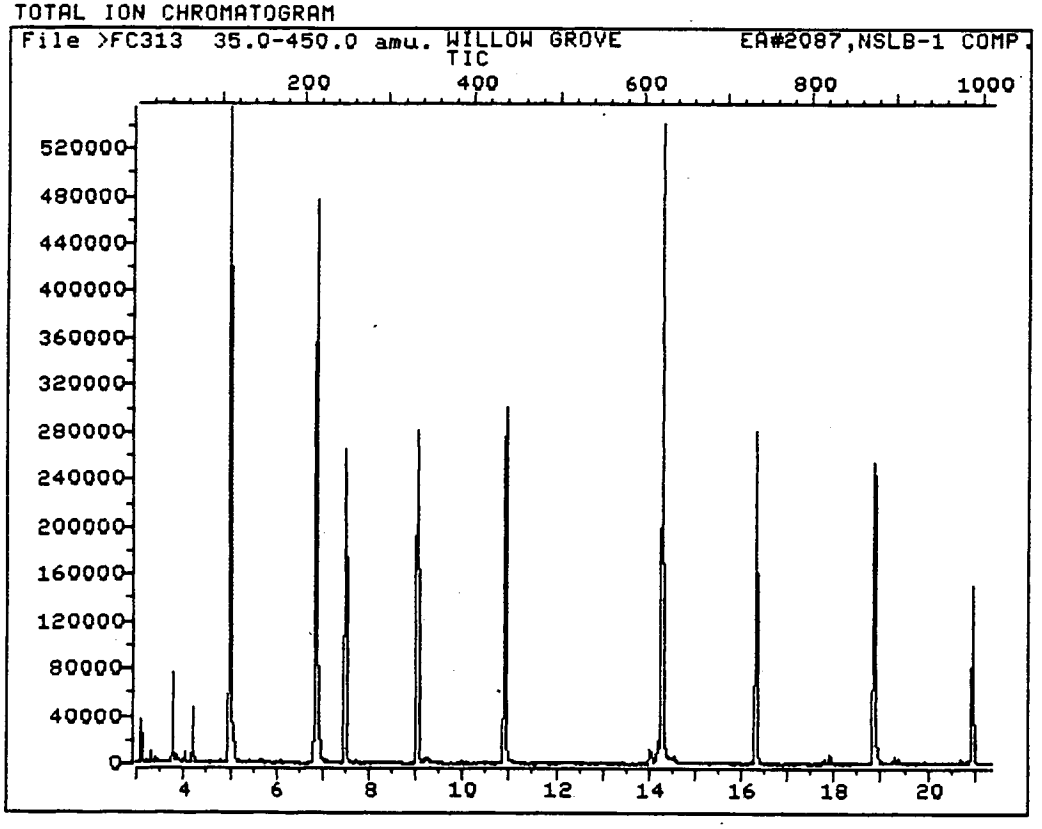
FORM I SV-TIC 1/87 Rev.

TOTAL ION CHROMATOGRAM



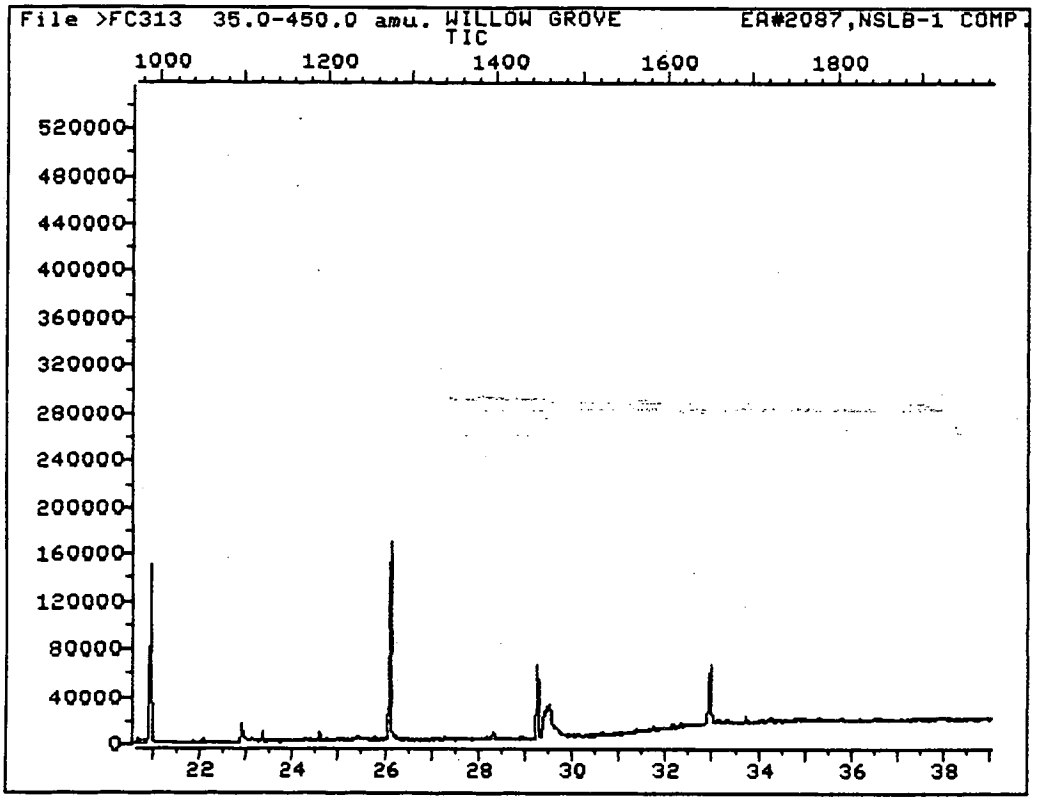
Data File: >FC313::D5 Quant Output File: ^FC313::QT
Name: WILLOW GROVE
Misc: EA#2087,NSLB-1 COMP.,SOIL,10.34g,1mL BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Op rator ID: UNCLE
Quant Time: 890531 05:04
Injected at: 890531 04:22

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC313::D5 Quant Output File: ^FC313::QT
Name: WILLOW GROVE
Misc: EA#2087,NSLB-1 COMP.,SOIL,10.34g,1mL BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 05:04
Inj cted at: 890531 04:22

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890531 05:04
Output File: ^FC313::QT Injected at: 890531 04:22
Data File: >FC313::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2087,NSLB-1 COMP.,SOIL,10.34g,1mL BTL# 7

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.51	152.0	105015	40.00	NG	97
2)	2-Fluorophenol	4.99	112.0	322496	92.27	NG 46%	81
3)	Phenol-d5	6.86	99.0	478471	109.66	NG 55%	92
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	7.11	128.0	644	~~.18~~	NG	92
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	B nzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.92	136.0	392524	40.00	NG	88
17)	Nitrobenzene-d5	9.03	82.0	239571	72.32	NG 72%	94
18)	Nitrob nzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	B nzoic Acid	10.38	122.0	1306	1.09	NG ✓	94
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	16.31	164.0	171184	40.00	NG	94
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	14.28	172.0	473855	74.07	NG 74%	95
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	16.33	163.0	58020	~~8.25~~	NG	53
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

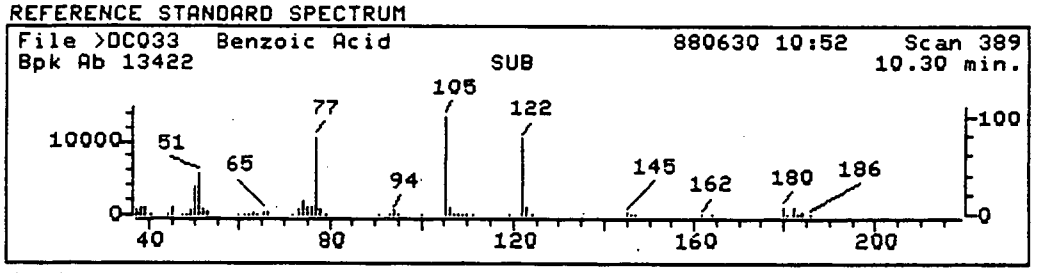
QUANT REPORT
page 2

Output File:^FC313:: Data File:>FC313::D5

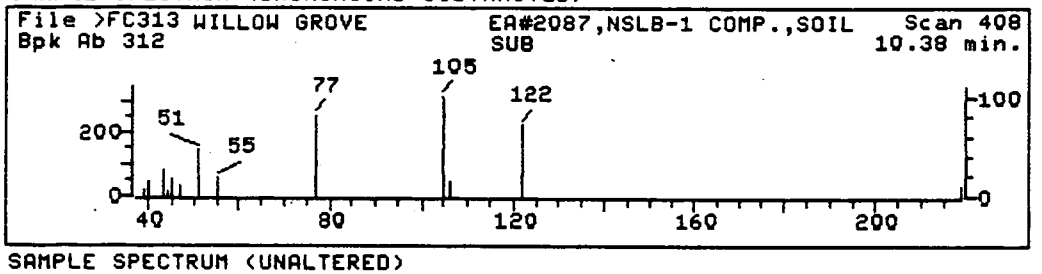
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	17.98	149.0	1776	~~.29~~	NG	92
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.96	188.0	168086	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.86	329.9	113123	135.12	NG 682	97
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	21.02	178.0	695	~~.16~~	NG	94
59)	Anthracene	21.02	178.0	695	~~.17~~	NG	94
60)	Di-n-Butyl phthalate	23.12	149.0	2692	~~.34~~	NG	98
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	29.28	240.0	54309	40.00	NG	99
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	T rphenyl-d14	26.14	244.0	179628	87.28	NG 872	88
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	29.56	149.0	5644	2.41	NG ✓	97
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.96	264.0	57596	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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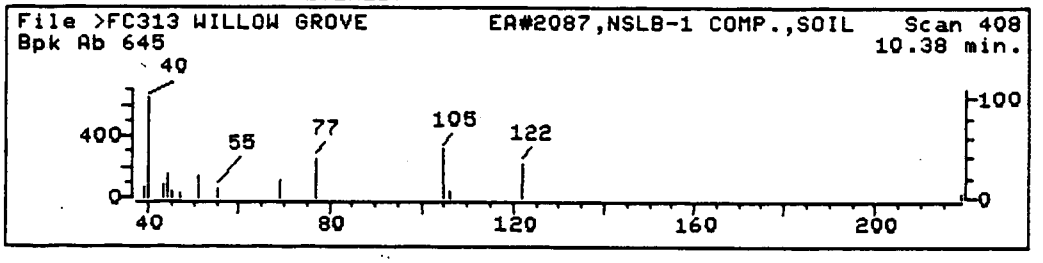
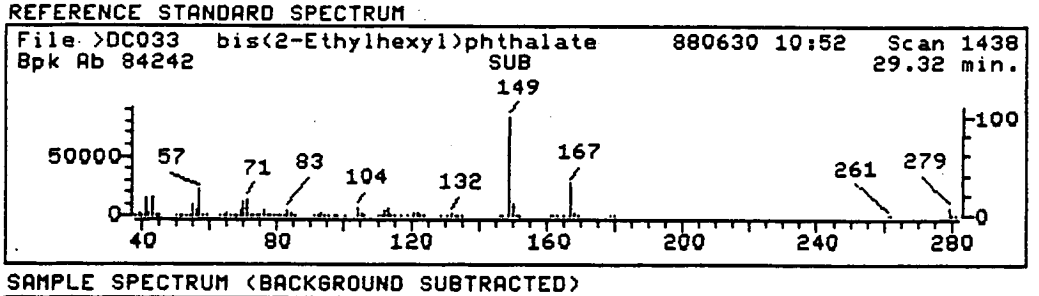


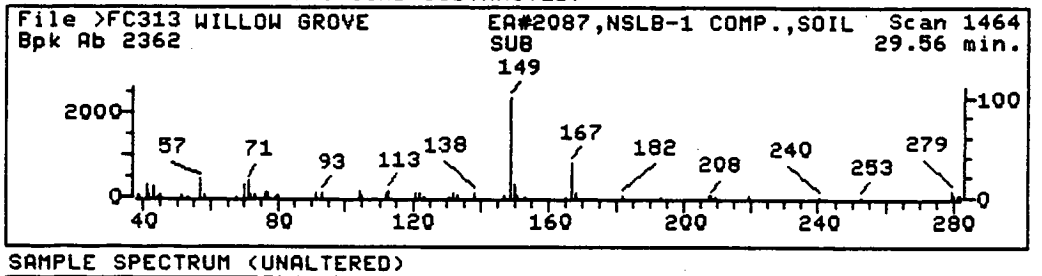
Data File: >FC313::D5 Quant Output File: ^FC313::QT
Name: WILLOW GROVE
Misc: EA#2087,NSLB-1 COMP.,SOIL,10.34g,1mL BTL# 7
Quant Time: 890531 05:04 Quant ID File: IDFCLP::BD
Injected at: 890531 04:22 Last Calibration: 890530 23:48

Compound No: 22
Compound Name: Benzoic Acid
Scan Number: 408
Retention Time: 10.38 min.
Quant Ion: 122.0
Area: 1306
Concentration: 1.09 NG
q-value: 94

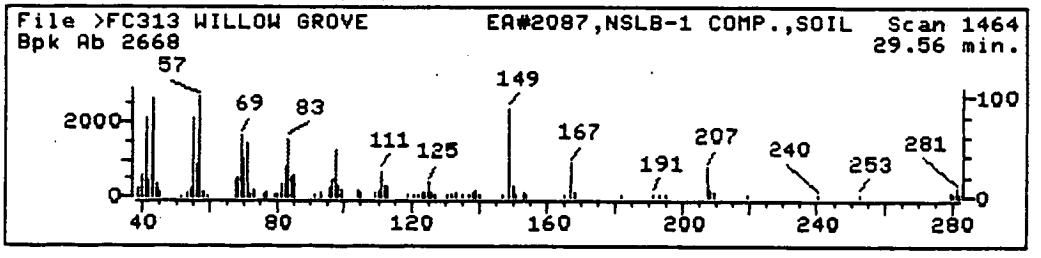
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

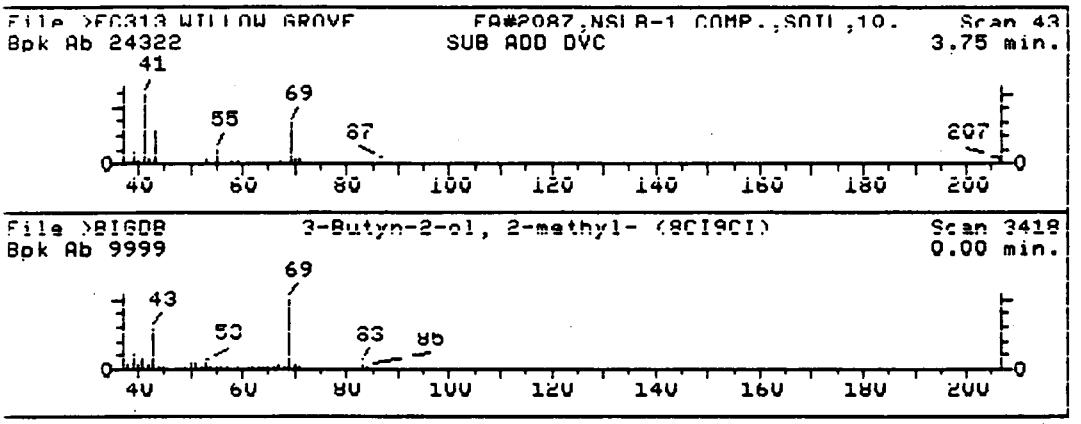


SAMPLE SPECTRUM (UNALTERED)



Data File: >FC313::D5 Quant Output File: ^FC313::QT
Name: WILLOW GROVE
Misc: EA#2087,NSLB-1 COMP.,SOIL,10.34g,1mL BTL# 7
Quant Time: 890531 05:04 Quant ID File: IDFCLP::BD
Inj cted at: 890531 04:22 Last Calibration: 890530 23:48

Compound No: 68
Compound Name: bis(2-Ethylhexyl)phthalate
Scan Number: 1464
Retention Time: 29.56 min.
Quant Ion: 149.0
Area: 5644
Concentration: 2.41 NG
q-value: 97



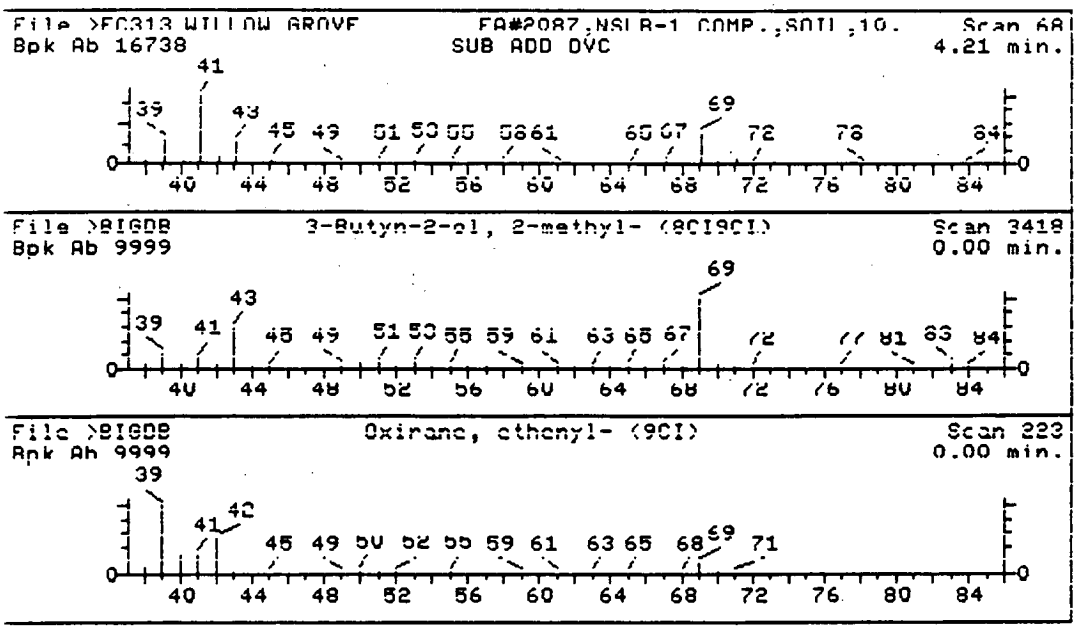
Retention time = 3.75

Area = 115759.0 Tentative Concentration is 810.00

1. 3-Butyn-2-ol, 2-methyl- (8CI9CI) 84 C5H8O

Sample file: >FC313 Spectrum #: 43
Search speed: 2 Tilting option: S No. of ion ranges searched: 51

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	43*	115195	3418	"BIGDB	27	52	2	0	57	25	17		14	



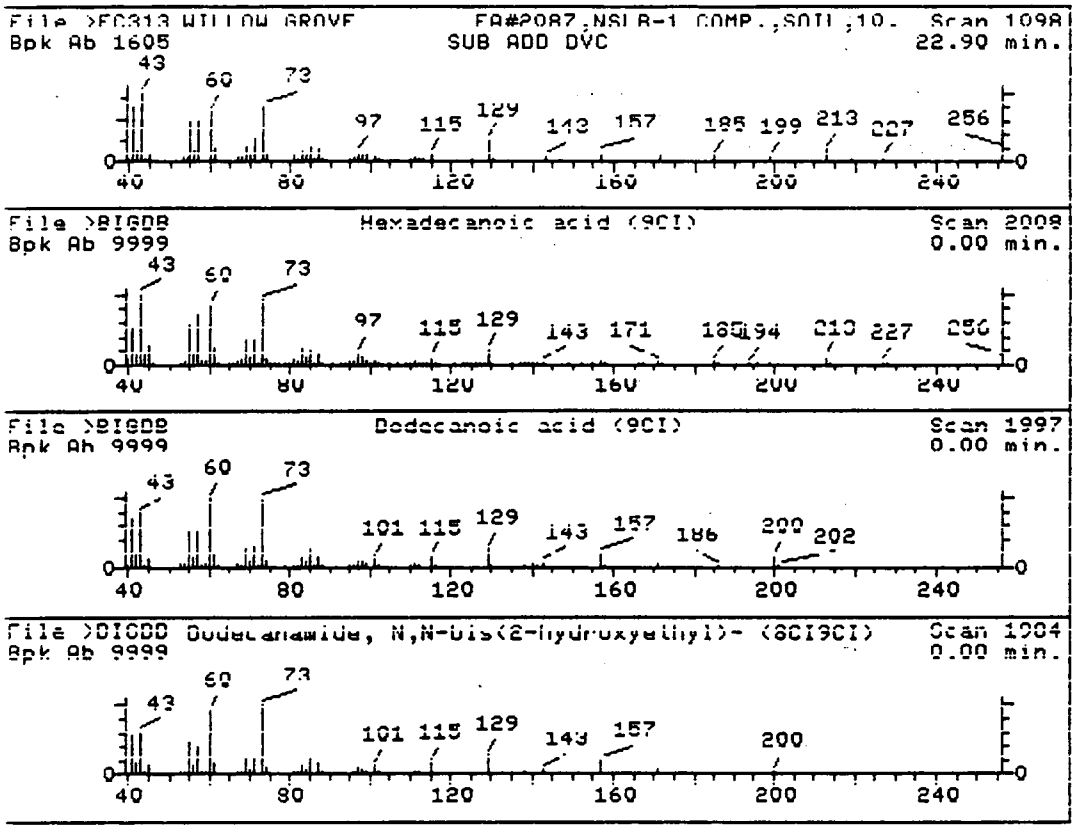
Retention time = 4.21

Area = 81857.00 Tentative Concentration is 570.00

1. 3-Butyn-2-ol, 2-methyl- (8CI9CI) 84 C5H8O
2. Oxirane, ethenyl- (9CI) 70 C4H6O

Sample file: >FC313 Spectrum #: 68
Search speed: 2 Tilting option: S No. of ion ranges searched: 53

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	15*	115195	3418	"BIGDB	28	36	2	0	44	57		3		14
2.	11*	930223	223	"BIGDB	27	45	2	0	35	64		2		14



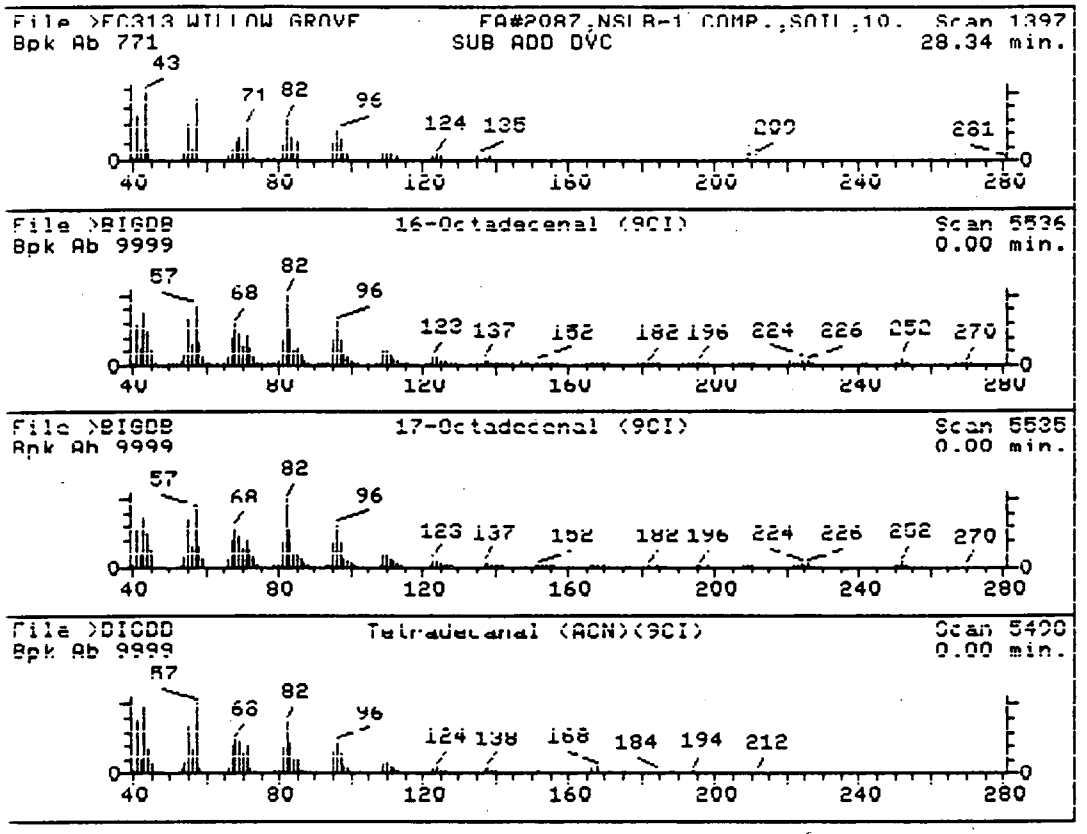
Retention time = 22.90

Area = 73717.00 Tentative Concentration is 790.00

1.	Hexadecanoic acid (9CI)	256	C16H32O2
2.	Dodecanoic acid (9CI)	200	C12H24O2
3.	Dodecanamide, N,N-bis(2-hydroxyethyl)- (8CI9CI)	287	C16H33NO3
4.	Glycine, N-methyl-N-(1-oxododecyl)- (9CI)	271	C15H29NO3
5.	Pentadecanoic acid (8CI9CI)	242	C15H30O2
6.	Tridecanoic acid (8CI9CI)	214	C13H26O2
7.	Heptanoic acid (8CI9CI)	130	C7H14O2

Sample file: >FC313 Spectrum #: 1098
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	79*	57103	2008	"BIGDB	80	71	1	0	79	28	37			77
2.	61	143077	1997	"BIGDB	70	68	0	0	74	34	22			46
3.	59	120401	1984	"BIGDB	79	74	0	0	69	40	21			59
4.	35	97789	1972	"BIGDB	56	94	0	0	80	41	12			26
5.	33	1002842	2007	"BIGDB	70	80	2	0	80	32	12			16
6.	29	638539	2000	"BIGDB	72	70	3	0	80	34	12			12
7.	28*	111148	1881	"BIGDB	36	61	0	0	67	51	8			32



Retention time = 28.34

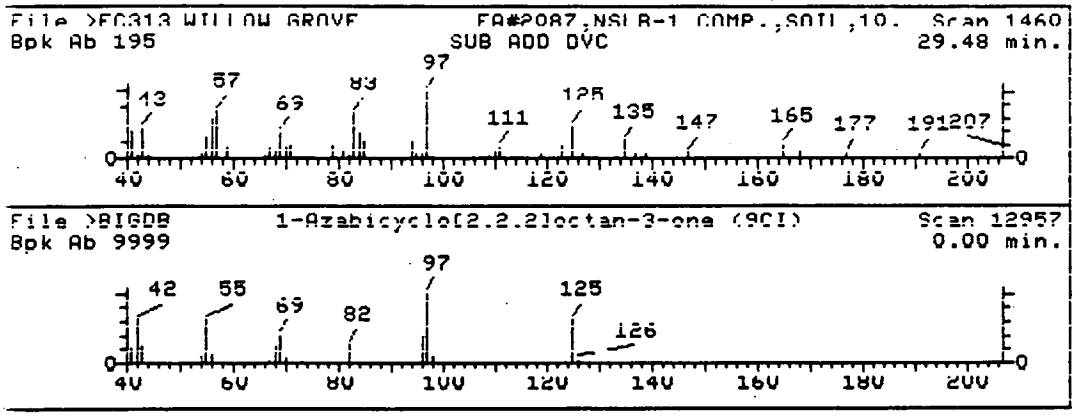
Area = 21457.00 Tentative Concentration is 560.00

1. 16-Octadecenal (9CI)	266	C18H34O
2. 17-Octadecenal (9CI)	266	C18H34O
3. Tetradecanal (ACN)(9CI)	212	C14H28O
4. 15-Octadecenal (9CI)	266	C18H34O
5. Hexadecanal (ACN)(9CI)	240	C16H32O
6. Octad canal (9CI)	268	C18H36O
7. 9-Octadecen-1-ol, (Z)- (8CI9CI)	268	C18H36O

Unknown

Sample file: >FC313 Spectrum #: 1397
Search speed: 2 Tilting option: S No. of ion ranges searched: 62

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	52	56554871	5536	"BIGDB	90	77	3	0	58	20	20		18	
2.	44	56554860	5535	"BIGDB	82	84	3	0	58	22	17		15	
3.	44	124254	5498	"BIGDB	82	67	3	0	77	25	17		15	
4.	41	56554939	5541	"BIGDB	72	95	3	0	58	25	17		12	
5.	34	629801	5529	"BIGDB	103	59	3	2	79	35	12		17	
6.	31	638664	8189	"BIGDB	78	81	3	0	70	35	12		14	
7.	31	143282	5546	"BIGDB	98	70	3	0	52	45	12		22	



Retention time = 29.48

Area = 45294.00 Tentative Concentration is 1200.00

1. 1-Azabicyclo[2.2.2]octan-3-one (9CI) 125 C7H11NO

Unknown

Sampl file: >FC313 Spectrum #: 1460
Search speed: 2 Tilting option: S No. of ion ranges searched: 50

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	15*	3731382	12957	"BIGDB	30	74	3	0	79	60		3		13

LIBRARY SEARCH SUMMARY

MS Data File:>FC313::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 5/31/89 4:22
Misc:EA#2087,NSLB-1 COMP.,SOIL,10.34g,1mL BTL# 7

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.75	115759	64839
2	4.21	81857	64839
3	22.90	73717	42042
4	28.34	21457	17297
5	29.48	45294	17297

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#2089,NSLB-21
Comp

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/05/89
Date Analyzed: 5/31/89 5:15
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup _ Yes ✓ No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	5900.	U
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	5900.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	5900.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	5900.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	5900.	U
100-02-7	4-Nitrophenol	5900.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	5900.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	5900.	U
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2400.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	420.	J
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB-2 Comp

Lab Name: EA LABORATORIES Contract: 10388-03

Lab Code: _____ Case No.: Willow Grove SAS No.: _____ SDG No.: _____

Matrix: (soil/~~water~~) _____ Lab Sample ID: EA#2089

Sample wt/vol: 10.11 (g/~~ml~~) _____ Lab File ID: >FC 314

Level: (1 w/med) Low Date Received: 5/3/89

% Moisture: not dec. 16.1 dec. _____ Date Extracted: 5/4/89

Extraction: (SepF/Cont/Sonc) Cont Date Analyzed: 5/31/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: _____

Number TICs found: 5

CONCENTRATION UNITS: (~~ug/L or~~ ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57556	1,2 Propanediol	3.08	770 J	
2.	—	Unknown	3.75	1300 J	
3.	—	Unknown	4.21	1000 J	
4.	57103	Hexadecanoic Acid	22.91	600 J	
5.	—	Unknown	29.48	1500 J	
6.					
7.					
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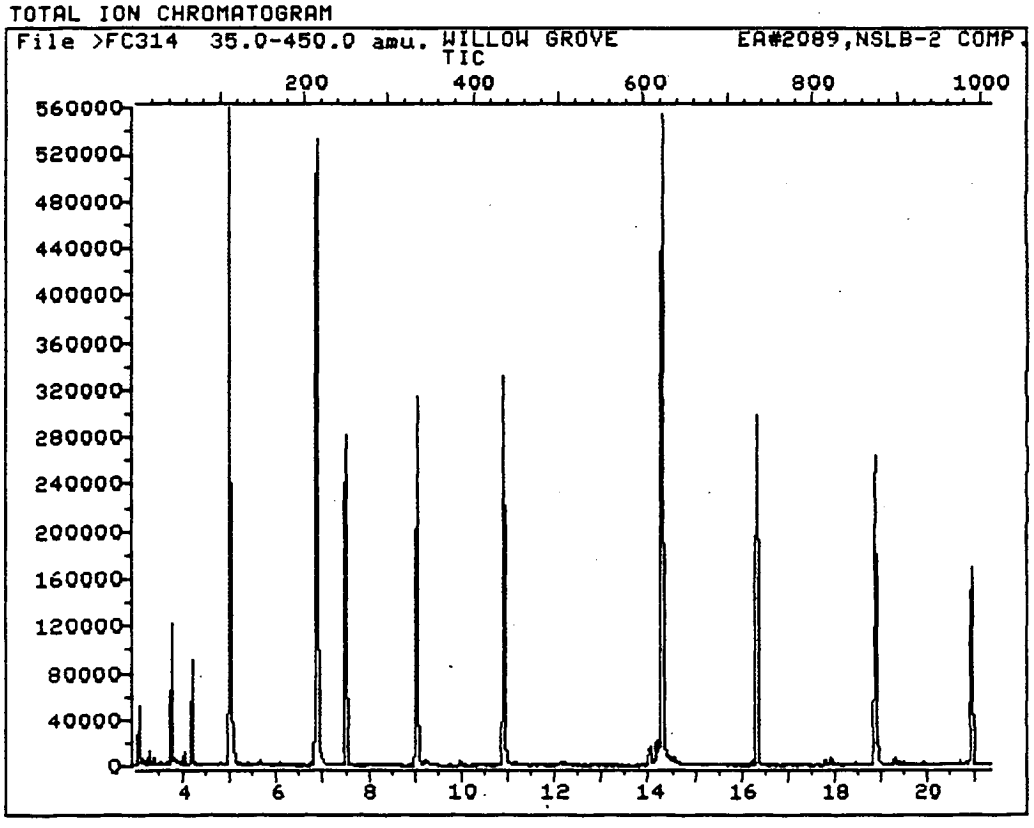
30.					

FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



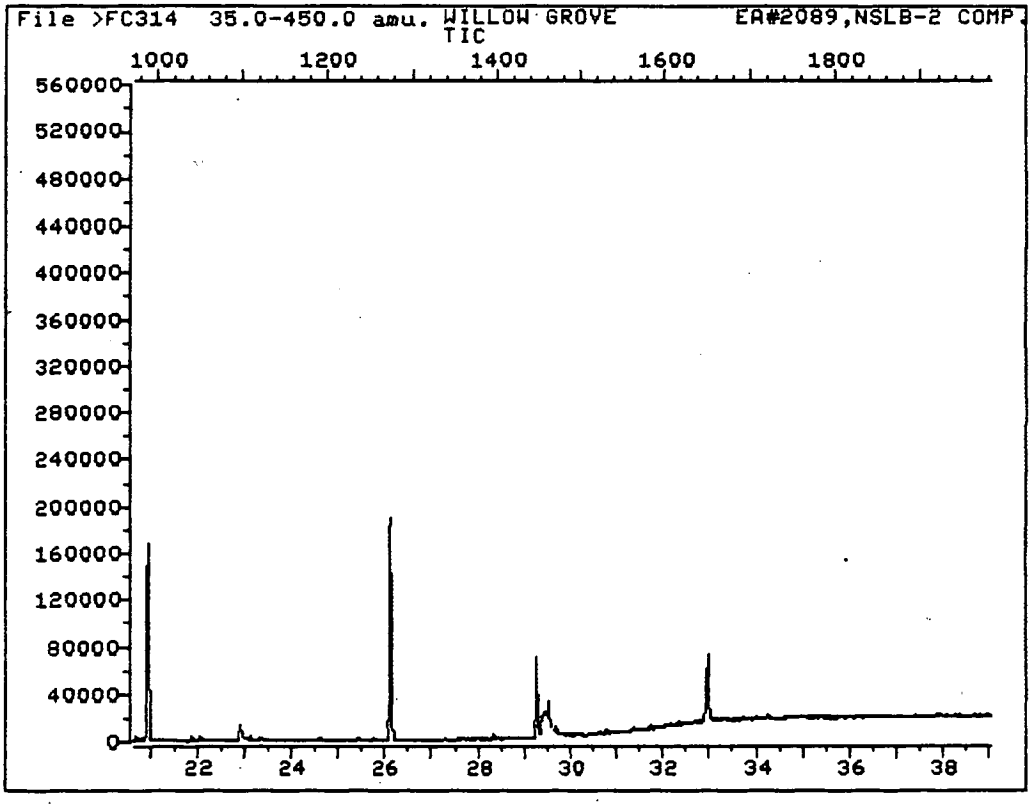
Data File: >FC314::D5 Quant Output File: ^FC314::QT
Name: WILLOW GROVE
Mi c: EA#2089,NSLB-2 COMP.,SOIL,10.11g,1mL BTL# 8

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Op rator ID: UNCLE
Quant Time: 890531 05:58
Injected at: 890531 05:15

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC314::D5 Quant Output File: ^FC314::QT
Name: WILLOW GROVE
Misc: EA#2089,NSLB-2 COMP.,SOIL,10.11g,1mL BTL# 8

Id Fil : IDFCLP::8D
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 05:58
Inject d at: 890531 05:15

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890531 05:58
Output File: ^FC314::QT Injected at: 890531 05:15
Data File: >FC314::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2089,NSLB-2 COMP.,SOIL,10.11g,1mL BTL# 8

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

	Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*d4-1,4-Dichlorobenzene	7.51	152.0	108888	40.00	NG		99
2)	2-Fluorophenol	4.99	112.0	352242	97.20	NG	49 %	81
3)	Phenol-d5	6.88	99.0	512960	113.39	NG	57 %	96
4)	Phenol	0.00	94.0	0	0.00	NG		
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG		
6)	2-Chlorophenol	7.11	128.0	706	~~.19~~	NG		95
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG		
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG		
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG		
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG		
11)	2-Methylphenol	0.00	108.0	0	0.00	NG		
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG		
13)	4-Methylphenol	0.00	108.0	0	0.00	NG		
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG		
15)	Hexachloroethane	0.00	117.0	0	0.00	NG		
16)	*d8-Naphthalene	10.93	136.0	423511	40.00	NG		86
17)	Nitrobenzene-d5	9.06	82.0	258434	72.31	NG	72 %	92
18)	Nitrobenzene	0.00	77.0	0	0.00	NG		
19)	Isophorone	0.00	82.0	0	0.00	NG		
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG		
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG		
22)	Benzoic Acid	10.38	122.0	918	~~.71~~	NG		92
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG		
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG		
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG		
26)	Naphthalene	0.00	128.0	0	0.00	NG		
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG		
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG		
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG		
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG		
31)	*d10-Acenaphthene	16.32	164.0	186013	40.00	NG		94
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG		
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG		
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG		
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG		
36)	2-Fluorobiphenyl	14.28	172.0	495224	71.24	NG	71 %	95
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG		
38)	Dimethylphthalate	16.33	163.0	62164	~~0.14~~	NG		53
39)	Acenaphthylene	0.00	152.0	0	0.00	NG		
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG		
41)	Acenaphthene	0.00	153.0	0	0.00	NG		
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG		

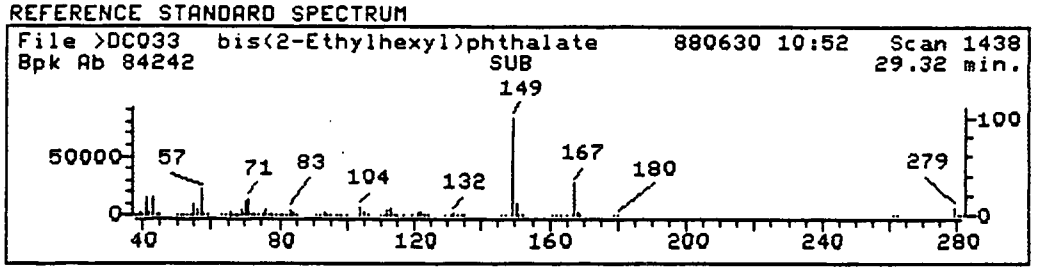
QUANT REPORT
page 2

Output File:^FC314:: Data File:>FC314::D5

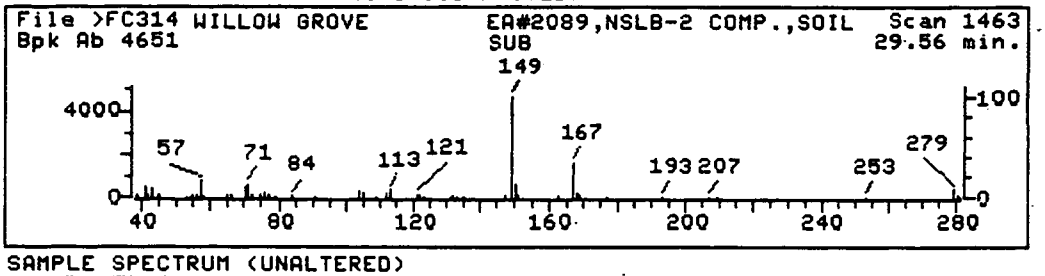
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	17.99	149.0	1590	~~.24~~	NG	95
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.96	188.0	182099	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.86	329.9	117990	130.09	NG 652	95
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthrac ne	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	23.13	149.0	3630	~~.42~~	NG	98
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	29.28	240.0	62878	40.00	NG	96
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	26.14	244.0	198484	83.30	NG 832	86
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	29.56	149.0	9749	3.60	NG ✓	97
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-P rylene	32.96	264.0	66230	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

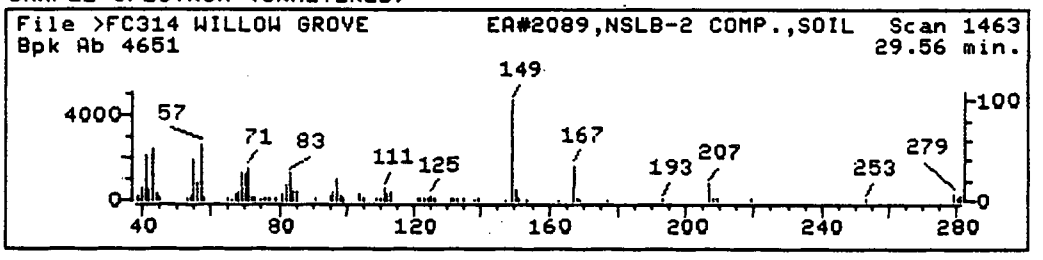
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

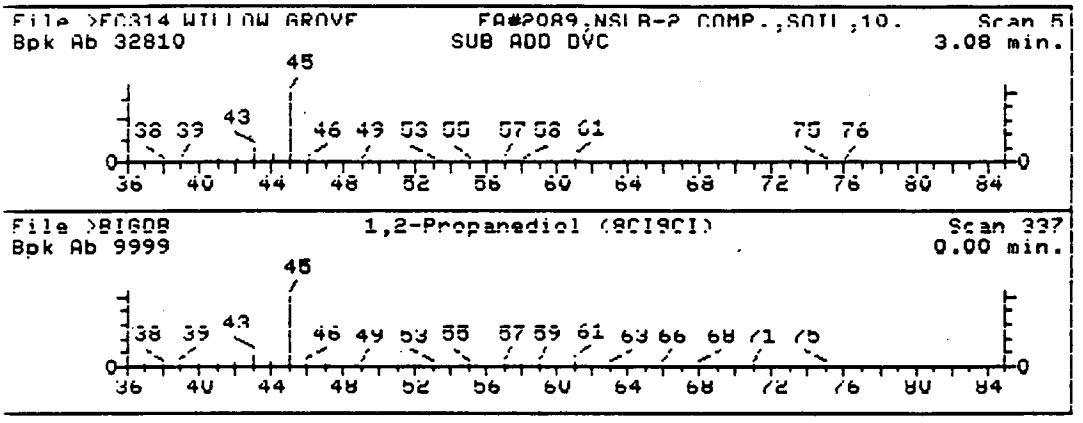


SAMPLE SPECTRUM (UNALTERED)



Data File: >FC314::D5 Quant Output File: ^FC314::QT
Nam : WILLOW GROVE
Misc: EA#2089,NSLB-2 COMP.,SOIL,10.11g,1mL BTL# 8
Quant Time: 890531 05:58 Quant ID File: IDFCLP::BD
Injected at: 890531 05:15 Last Calibration: 890530 23:48

Compound No: 68
Compound Name: bis(2-Ethylhexyl)phthalate
Scan Number: 1463
Retention Time: 29.56 min.
Quant Ion: 149.0
Ar a: 9749
Concentration: 3.60 NG
q-value: 97



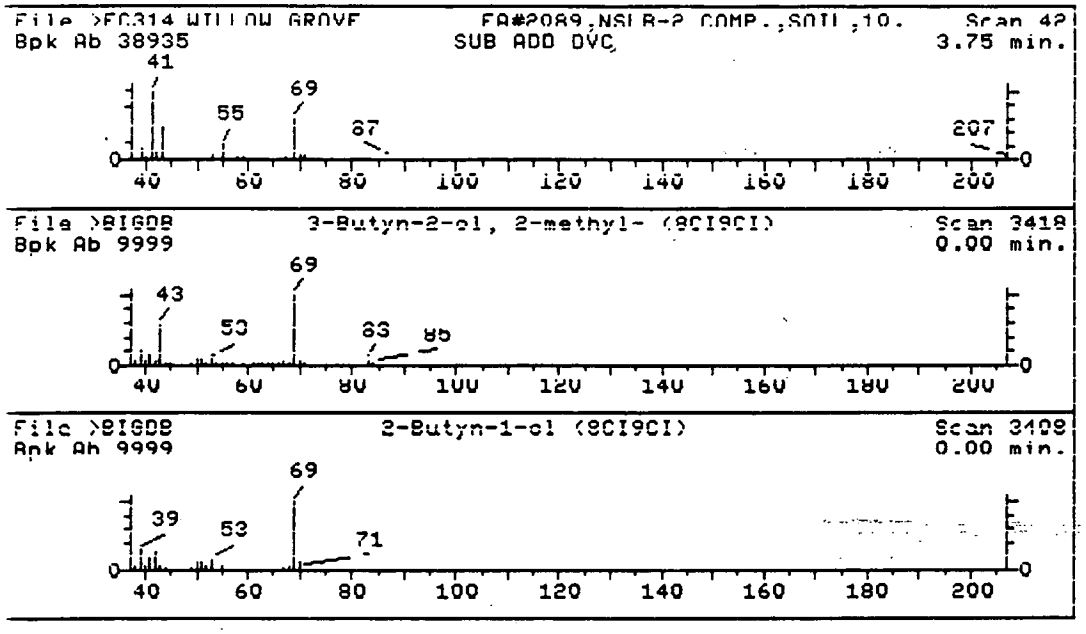
Retention time = 3.08

Area = 111465.0 Tentative Concentration is 770.00

(1) 1,2-Propanediol (8CI9CI) 76 C3H8O2

Sampl file: >FC314 Spectrum #: 5
Search speed: 2 Tilting option: S No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	70	57556	337	"BIGDB	38	45	1	0	80	6	42	14		



Retention time = 3.75

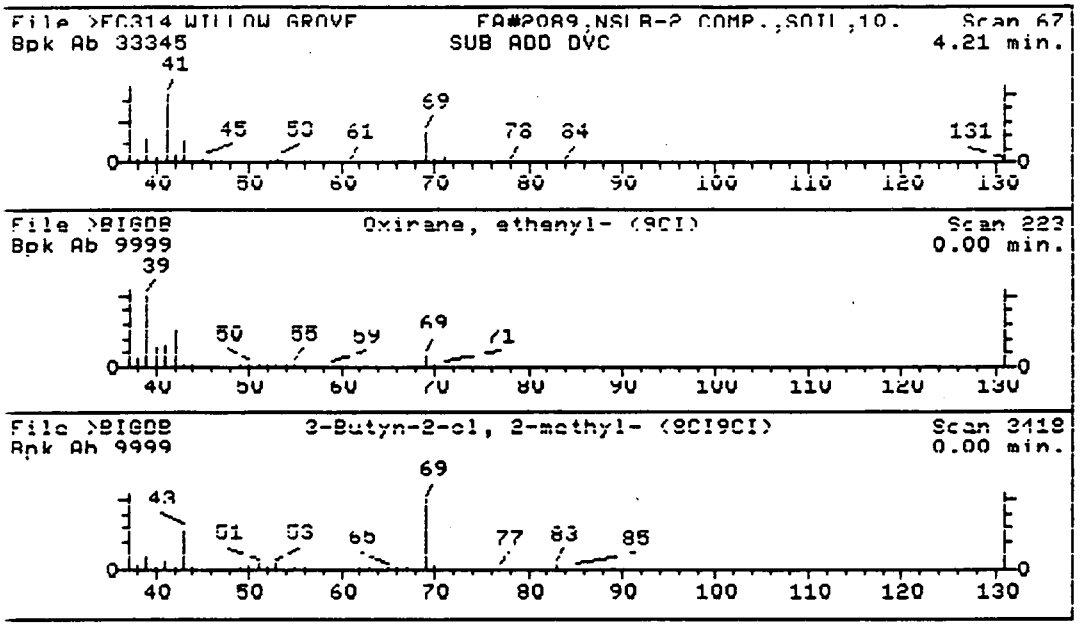
Area = 183434.0 Tentative Concentration is 1300.00

1. 3-Butyn-2-ol, 2-methyl- (8CI9CI) 84 C5H8O
2. 2-Butyn-1-ol (8CI9CI) 70 C4H6O

Unknown

Sample fil : >FC314 Spectrum #: 42
Search sp ed: 2 Tilting option: S No. of ion ranges searched: 53

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	36*	115195	3418	"BIGDB	23	56	2	0	59	29	14		13	
2.	20*	764012	3408	"BIGDB	23	57	2	0	37	55	5		13	



Retention time = 4.21

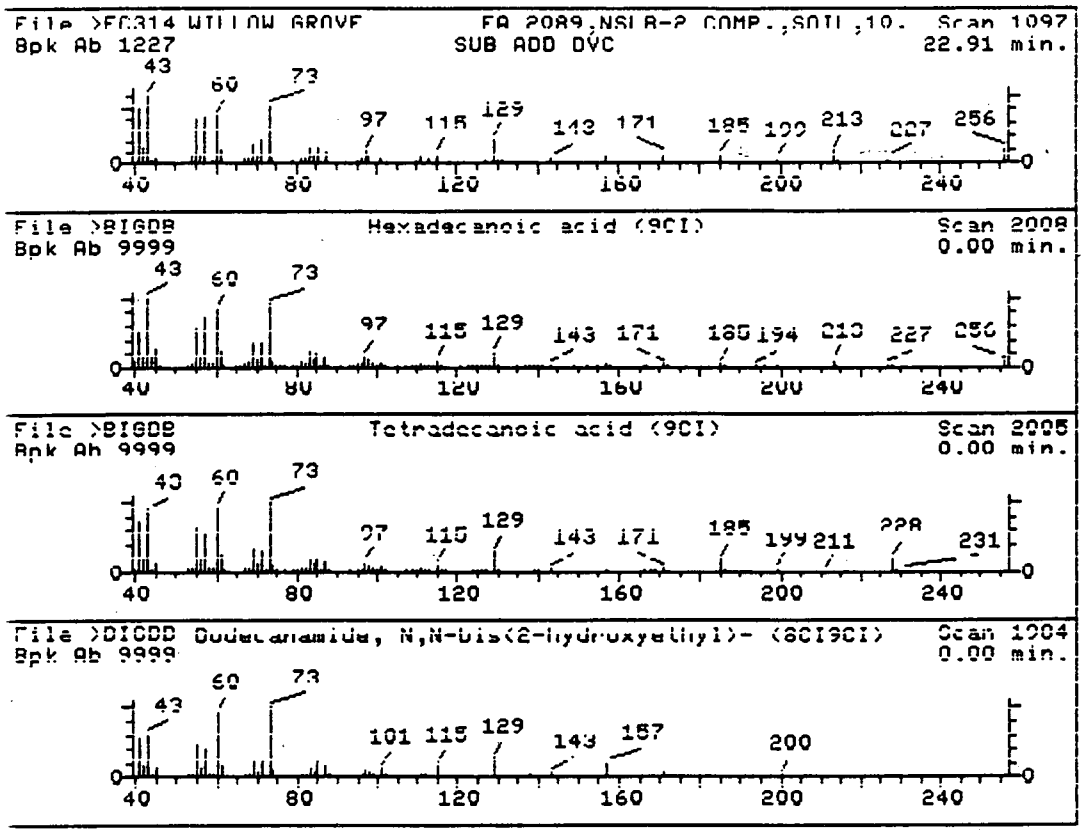
Area = 146810.0 Tentative Concentration is 1000.00

1. Oxirane, ethenyl- (9CI) 70 C4H6O
2. 3-Butyn-2-ol, 2-methyl- (8CI9CI) 84 C5H8O

Unknown

Sample file: >FC314 Spectrum #: 67
Search speed: 2 Tilting option: S No. of ion ranges searched: 53

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	11*	930223	223	"BIGDB	23	49	2	0	34	64		2		13
2.	11*	115195	3418	"BIGDB	32	32	2	0	44	64		2		16



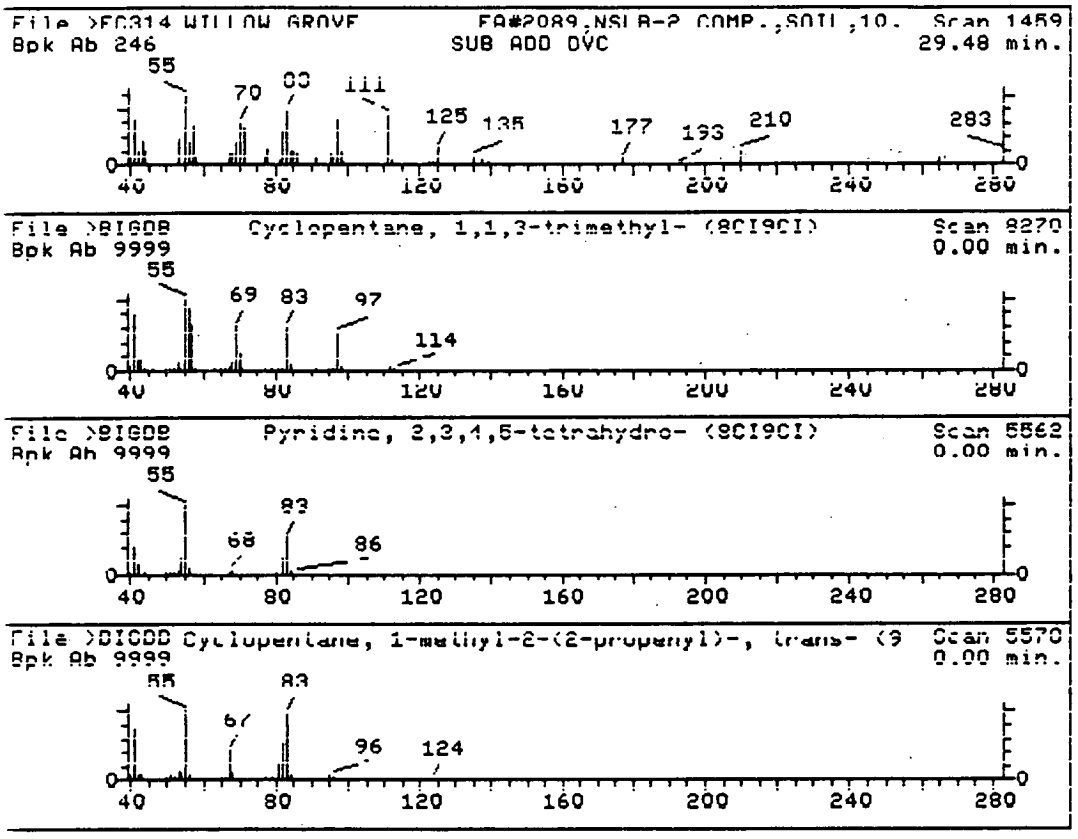
Retention time = 22.91

Area = 59427.00 Tentative Concentration is 600.00

1. Hexadecanoic acid (9CI)	256	C16H32O2
2. Tetradecanoic acid (9CI)	228	C14H28O2
3. Dodecanamide, N,N-bis(2-hydroxyethyl)- (8CI9CI)	287	C16H33NO3
4. Butyraldehyde, semicarbazone (8CI)	129	C5H11N3O
5. Glycin , N-methyl-N-(1-oxododecyl)- (9CI)	271	C15H29NO3
6. Heptanoic acid (8CI9CI)	130	C7H14O2
7. Octanoic acid (8CI9CI)	144	C8H16O2

Sample file: >FC314 Spectrum #: 1097
Search speed: 2 Tilting option: S No. of ion ranges searched: 52

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	73*	57103	2008	"BIGDB	81	70	1	0	85	36	28			77
2.	25	544638	2005	"BIGDB	91	55	3	0	78	50	7			19
3.	23	120401	1984	"BIGDB	86	67	1	0	73	57	6			42
4.	20*	13183216	1927	"BIGDB	26	89	3	0	71	53	5			13
5.	15	97789	1972	"BIGDB	57	93	1	0	81	59	3			15
6.	13*	111148	1881	"BIGDB	36	61	0	0	61	65	3			32
7.	11	124072	1907	"BIGDB	28	76	0	0	61	65	2			14



Retention time = 29.48

Area = 63170.00 Tentative Concentration is 1500.00

1.	Cyclop ntane, 1,1,3-trimethyl- (8CI9CI)	112	C8H16
2.	Pyridine, 2,3,4,5-tetrahydro- (8CI9CI)	83	C5H9N
3.	Cyclop ntane, 1-methyl-2-(2-propenyl)-, trans- (9CI)	124	C9H16
4.	1H-1,2,4-Triazole, 1-butyl- (8CI9CI)	125	C6H11N3
5.	7-Oxabicyclo[4.1.0]heptane (8CI9CI)	98	C6H10O
6.	Cyclohexane, 1,1,3-trimethyl-2-(3-methylpentyl)- (9C	210	C15H30

Unthought

Sample file: >FC314 Spectrum #: 1459
Search speed: 2 Tilting option: S No. of ion ranges searched: 54

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	20*	4516692	8270	"BIGDB	50	60	3	0	90	53		5		14
2.	15*	505180	5562	"BIGDB	25	68	3	0	144	60		3		13
3.	15*	50746537	5578	"BIGDB	24	77	3	0	80	60		3		12
4.	15*	6086222	12958	"BIGDB	20	83	1	0	46	57		3		14
5.	11*	286204	5586	"BIGDB	24	91	3	0	79	63		2		12
6.	11*	54965058	25678	"BIGDB	22	122	3	0	65	63		2		12

LIBRARY SEARCH SUMMARY

MS Data File:>FC314::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 5/31/89 5:15
Misc:EA#2089,NSLB-2 COMP.,SOIL,10.11g,1mL BTL# 8

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.08	111465	68645
2	3.75	183434	68645
3	4.21	146810	68645
4	22.91	59427	46547
5	29.48	63170	19588

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#2091,NSLB-3

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/05/89
Date Analyzed: 5/31/89 6:07
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	6200.	U
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	480.	J
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	6200.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	6200.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	6200.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	6200.	U
100-02-7	4-Nitrophenol	6200.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	6200.	U
86-30-6	N-Nitrososdiphenylamine (1)	120.	J T
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	6200.	U
85-01-8	Phenanthrene	160.	J
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2500.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	460.	J
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

T – Spectra does not meet conformation criteria; interfering ions 4 in 044 spectra. Compound is suspected to be present.

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB-3 Comp

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: _____ Case No.: WILLOW GR. SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: EA#2091

Sample wt/vol: 10.11 (g/mL) g Lab File ID: 2FC315

Level: (low/med) LO Date Received: 5/2/89

% Moisture: not dec. 20.2 dec. _____ Date Extracted: 5/4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 5/31/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: _____

Number TICs found: 20

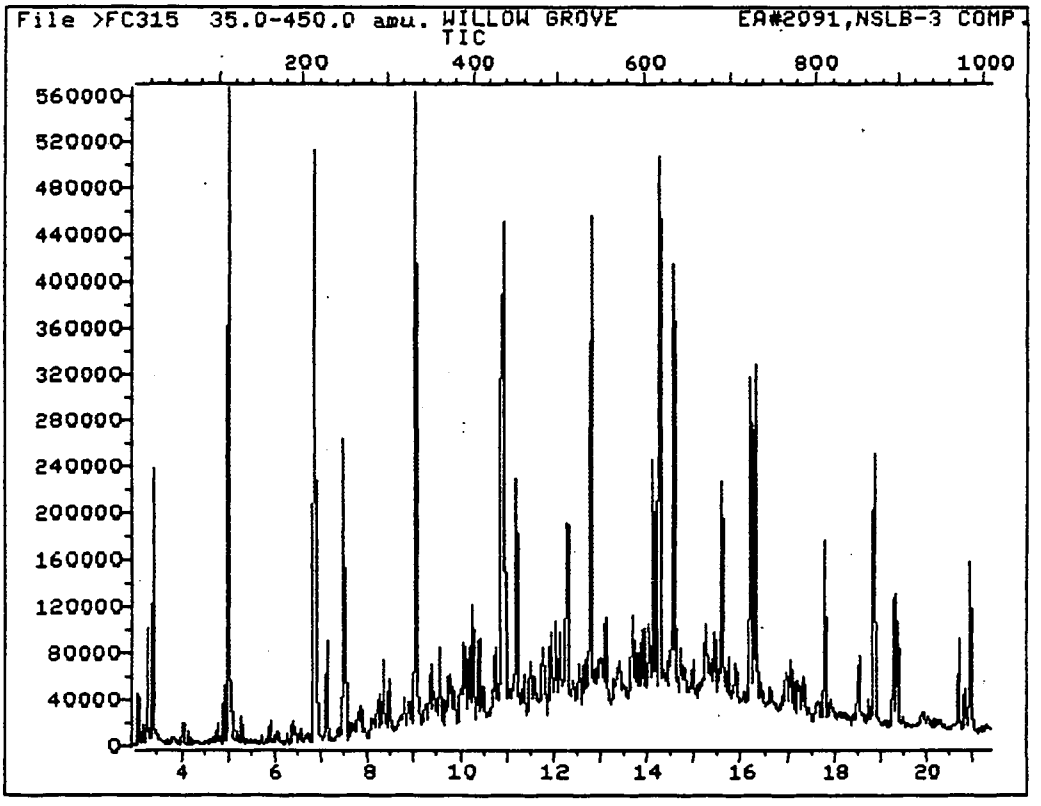
CONCENTRATION UNITS: (~~ug/L or~~ ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	108883	Methylbenzene	3.41	3300 J	
2.	—	UNIDENTIFIED ALKANE	10.08	1100 J	
3.	—	UNKNOWN	10.77	720 J	
4.	7045718	2-methylundecane	10.26	710 J	
5.	—	UNIDENTIFIED ALKANE	11.21	1400 J	
6.	—	UNKNOWN	11.78	800 J	
7.	—	UNKNOWN	11.96	870 J	
8.	26730143	7-methyltridecane	12.29	1500 J	
9.	629505	Tridecane	12.80	2700 J	
10.	—	UNIDENTIFIED ALKANE	13.67	1900 J	
11.	—	UNIDENTIFIED ALKANE	14.04	1200 J	
12.	—	UNIDENTIFIED TRIMETHYL DODECANE	14.15	2500 J	
13.	—	~~UNIDENTIFIED~~ UNIDENTIFIED ALKANE	14.55	7100 J	
14.	—	UNIDENTIFIED ALKANE	15.59	3500 J	
15.	—	UNIDENTIFIED ALKANE	16.21	2900 J	
16.	—	UNIDENTIFIED ALKANE	17.80	2800 J	
17.	—	UNIDENTIFIED ALKANE	18.53	1200 J	
18.	—	UNIDENTIFIED ALKANE	19.30	~~2500~~ 3900 J	
19.	—	UNIDENTIFIED ALKANE	19.32	2500 J	
20.	—	UNIDENTIFIED ALKANE	20.72	2500 J	
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



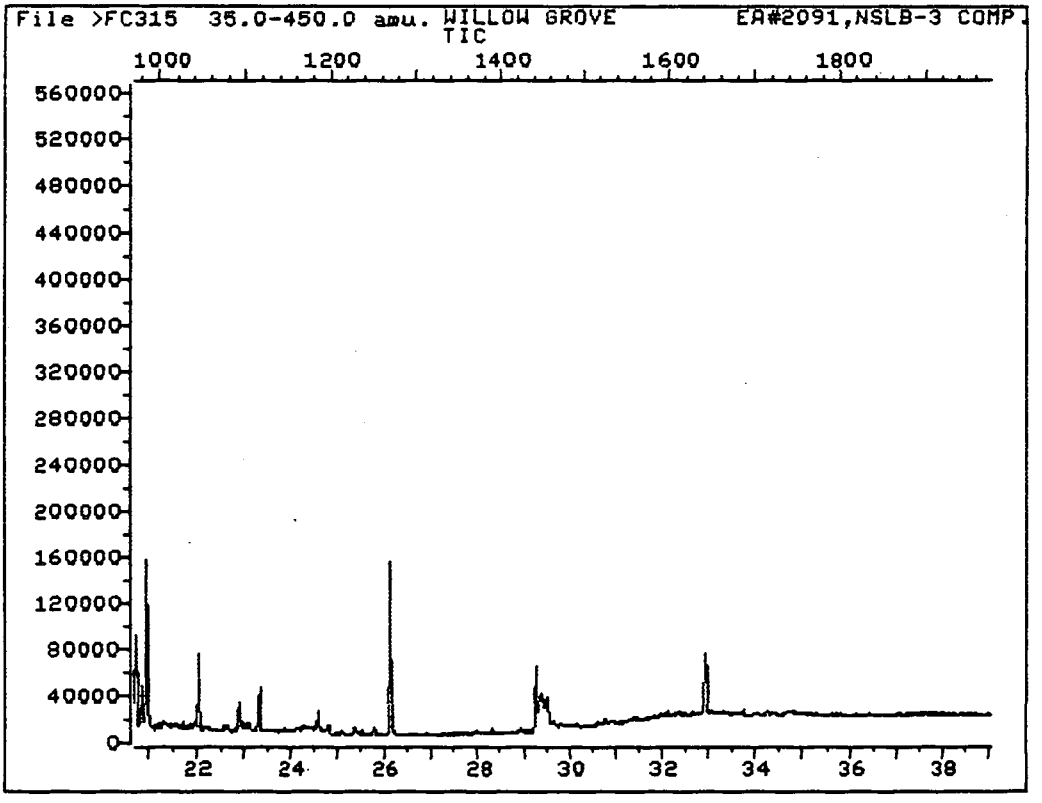
Data File: >FC315::D2 Quant Output File: ^FC315::QT
Name: WILLOW GROVE
Mi c: EA#2091,NSLB-3 COMP.,SOIL,10.11g,1mL BTL# 9

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 06:50
Injected at: 890531 06:07

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC315::D2 Quant Output File: ^FC315::QT
Name: WILLOW GROVE
Mi c: EA#2091,NSLB-3 COMP.,SOIL,10.11g,1mL BTL# 9

Id File: IDFCLP::8D
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 06:50
Injected at: 890531 06:07

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890531 06:50
Output File: ^FC315::QT Injected at: 890531 06:07
Data File: >FC315::D2 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2091,NSLB-3 COMP.,SOIL,10.11g,1mL BTL# 9

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.50	152.0	103850	40.00	NG	96
2)	2-Fluorophenol	4.99	112.0	326315	94.41	NG 47%	82
3)	Phenol-d5	6.86	99.0	459513	106.50	NG 53%	95
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	7.12	128.0	603	~~.17~~	NG	96
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.92	136.0	370030	40.00	NG	87
17)	Nitrobenzene-d5	9.04	82.0	212488	68.04	NG 68%	87
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	9.43	82.0	5339	~~.73~~	NG	98
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	10.97	128.0	9273	~~1.08~~	NG	92
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	13.03	142.0	19719	3.87	NG	84
31)	*d10-Acenaphthene	16.32	164.0	163681	40.00	NG	97
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	14.28	172.0	461888	75.51	NG 76%	95
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	16.32	163.0	55504	~~8.26~~	NG	52
39)	Ac naphthylene	15.30	152.0	1425	~~.19~~	NG	92
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	16.41	153.0	1155	~~.24~~	NG	94
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

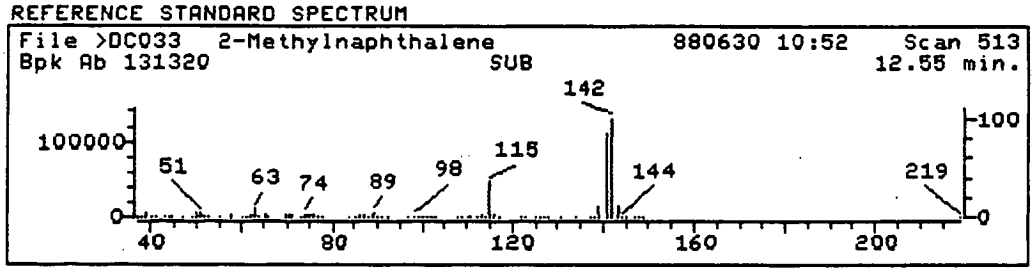
QUANT REPORT
page 2

Output File:^FC315:: Data File:>FC315::D2

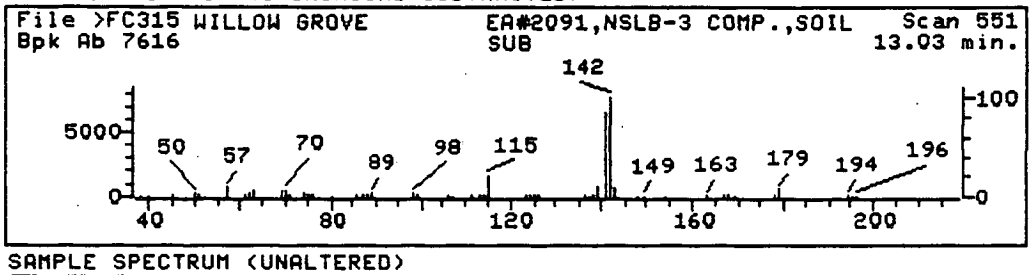
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	16.92	168.0	2158	~~.36~~	NG	96
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	17.98	149.0	1521	~~.26~~	NG	89
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	18.00	166.0	1744	~~.45~~	NG	82
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.96	188.0	155308	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	18.40	169.0	2595	1.01	NG ✓	85
54)	2,4,6-Tribromophenol	18.86	329.9	90963	117.59	NG 59%	95
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	21.01	178.0	5113	1.30	NG ✓	97
59)	Anthracene	21.18	178.0	882	~~.24~~	NG	80
60)	Di-n-Butyl phthalate	23.12	149.0	5314	~~.73~~	NG	99
61)	Fluoranthene	24.82	202.0	2862	~~.99~~	NG	95
62)	*d12-Chrysene	29.27	240.0	53830	40.00	NG	97
63)	Pyrene	25.53	202.0	2375	~~.91~~	NG	96
64)	Terphenyl-d14	26.13	244.0	165788	81.27	NG 81%	83
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	29.35	228.0	1289	~~.78~~	NG	89
68)	bis(2-Ethylhexyl)phthalate	29.55	149.0	8605	3.71	NG ✓	97
69)	Chrysene	29.35	228.0	1289	~~.85~~	NG	93
70)	*d12-Perylene	32.96	264.0	60457	40.00	NG	93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	32.01	252.0	1521	~~.85~~	NG	93
73)	Benzo(k)Fluoranthene	32.06	252.0	912M	~~.62~~	NG	93
74)	Benzo(a)Pyrene	32.80	252.0	1214	~~.79~~	NG	90
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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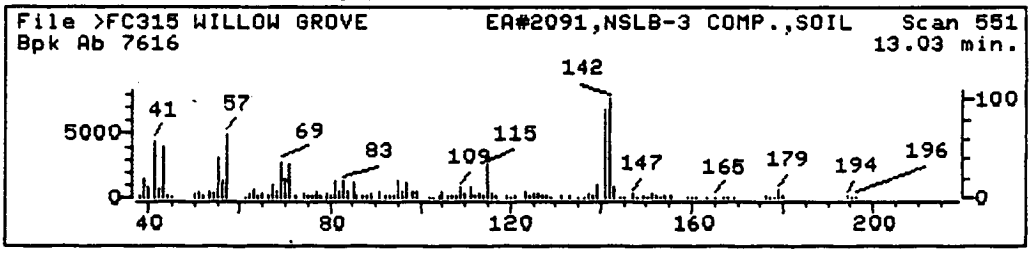
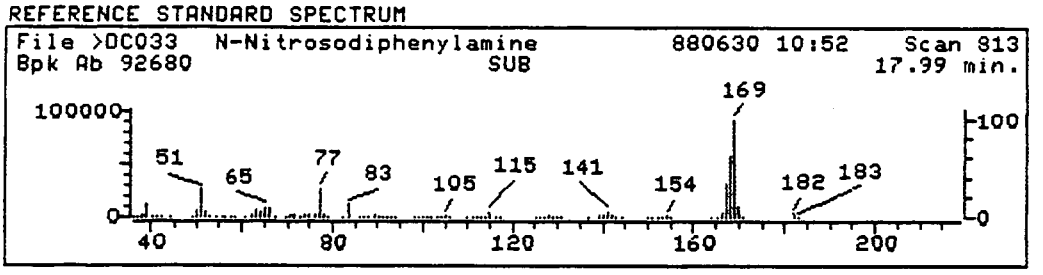


Data File: >FC315::D2 Quant Output File: ^FC315::QT
Name: WILLOW GROVE
Misc: EA#2091,NSLB-3 COMP.,SOIL,10.11g,1mL BTL# 9
Quant Time: 890531 06:50 Quant ID File: IDFCLP::BD
Injected at: 890531 06:07 Last Calibration: 890530 23:48

Compound No: 30
Compound Name: 2-Methylnaphthalene
Scan Number: 551
Retention Time: 13.03 min.
Quant Ion: 142.0
Area: 19719
Concentration: 3.87 NG
q-value: 84

REFERENCE STANDARD SPECTRUM



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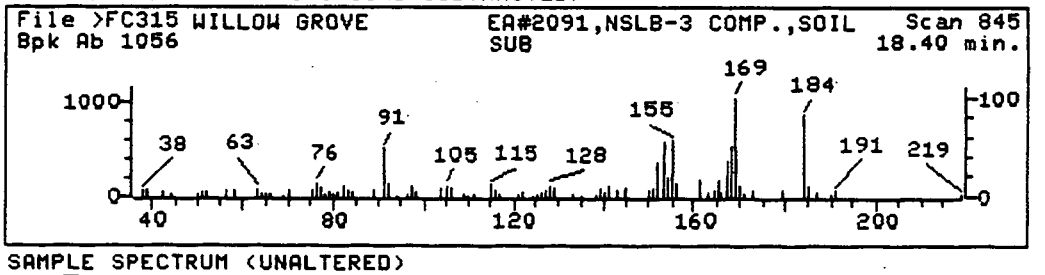

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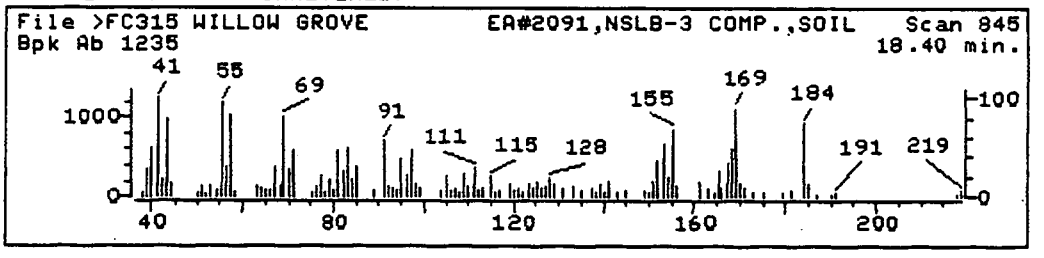

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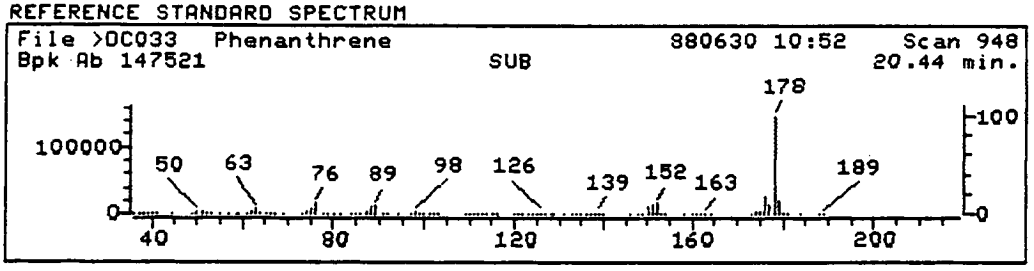
Name: WILLOW GROVE
Misc: EA#2091,NSLB-3 COMP.,SOIL,10.11g,1mL BTL# 9
Quant Time: 890531 06:50 Quant ID File: IDFCLP::BD
Injected at: 890531 06:07 Last Calibration: 890530 23:48

Compound No: 53
Compound Name: N-Nitrosodiphenylamine
Scan Number: 845
Retention Time: 18.40 min.
Quant Ion: 169.0
Area: 2595
Concentration: 1.01 NG
q-value: 85

REFERENCE STANDARD SPECTRUM



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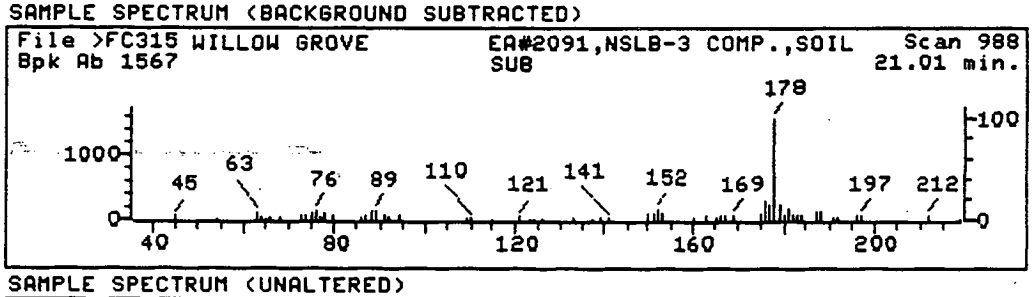

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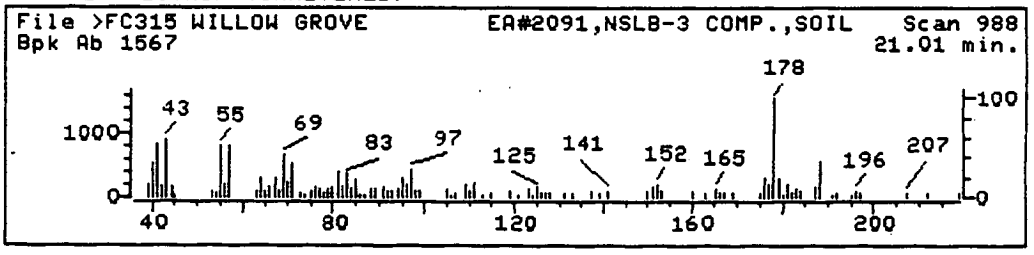

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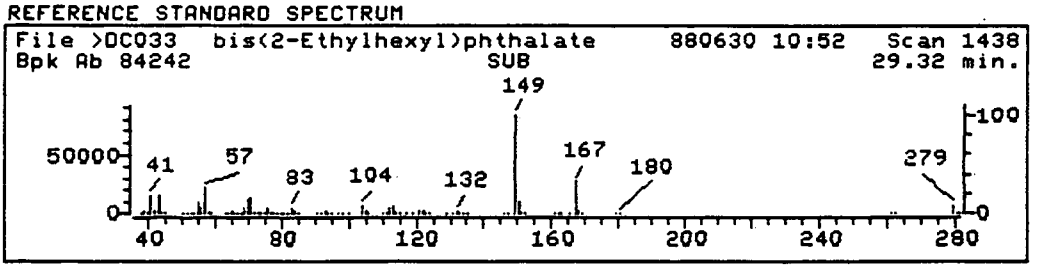
Name: WILLOW GROVE
Misc: EA#2091,NSLB-3 COMP.,SOIL,10.11g,1mL BTL# 9
Quant Time: 890531 06:50 Quant ID File: IDFCLP::BD
Injected at: 890531 06:07 Last Calibration: 890530 23:48

Compound No: 58
Compound Name: Phenanthrene
Scan Number: 988
Retention Time: 21.01 min.
Quant Ion: 178.0
Area: 5113
Concentration: 1.30 NG
q-value: 97

REFERENCE STANDARD SPECTRUM



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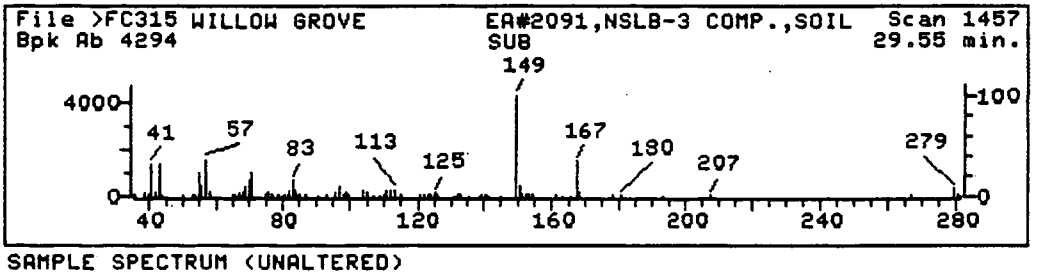

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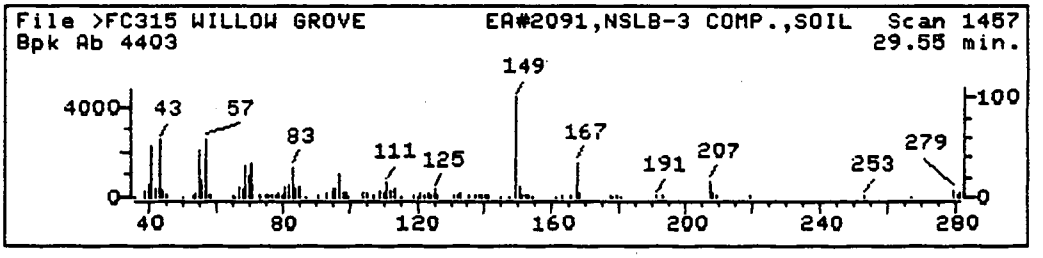
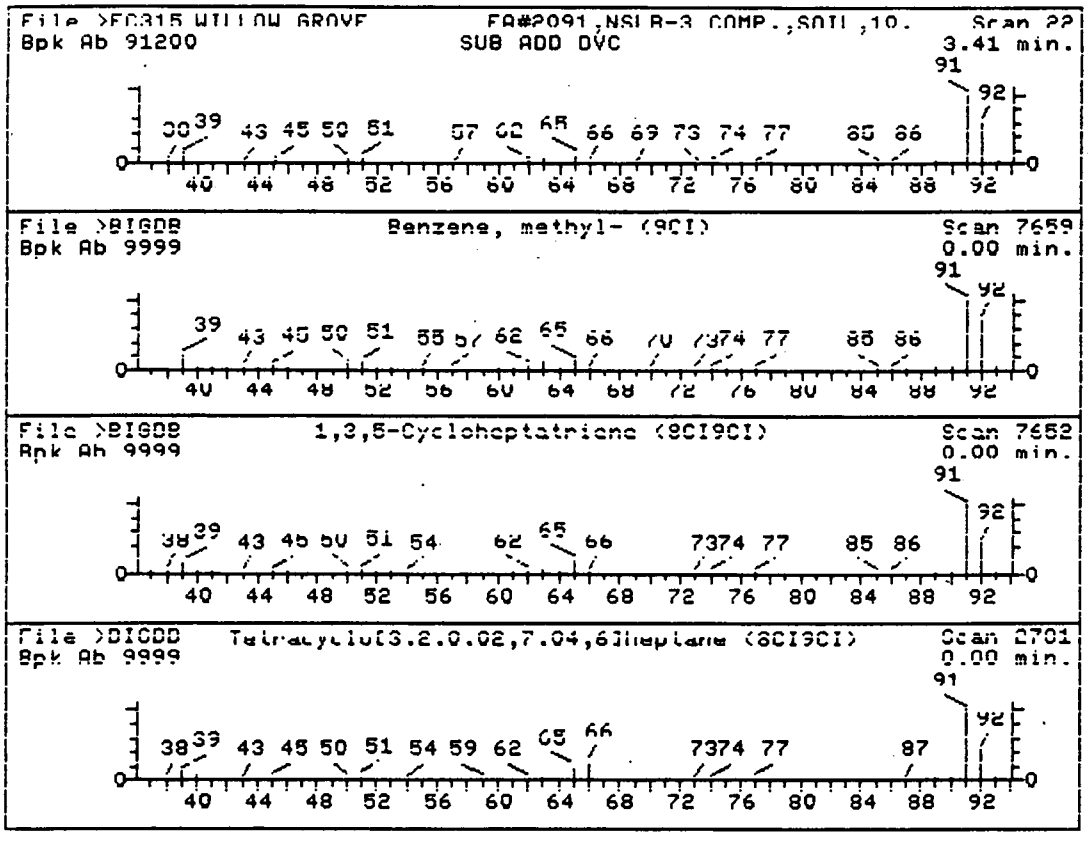


Data File: >FC315::D2 Quant Output File: ^FC315::QT
Name: WILLOW GROVE
Misc: EA#2091,NSLB-3 COMP.,SOIL,10.11g,1mL BTL# 9
Quant Time: 890531 06:50 Quant ID File: IDFCLP::BD
Injected at: 890531 06:07 Last Calibration: 890530 23:48

Compound No: 68
Compound Name: bis(2-Ethylhexyl)phthalate
Scan Number: 1457
Retention Time: 29.55 min.
Quant Ion: 149.0
Area: 8605
Concentration: 3.71 NG
q-value: 97



Retention time = 3.41

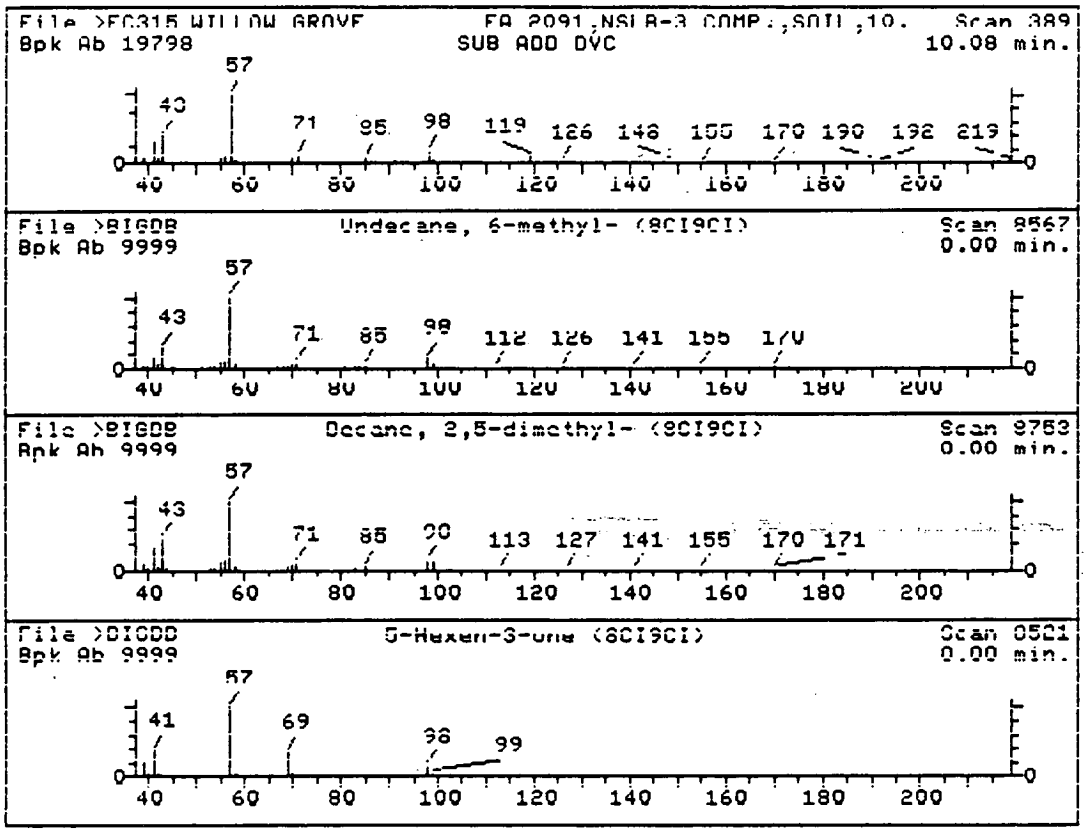
Area = 524990.0 Tentative Concentration is 3300.00

1.	Benzene, methyl- (9CI)	92	C7H8
2.	1,3,5-Cycloheptatriene (8CI9CI)	92	C7H8
3.	Tetracyclo[3.2.0.02,7.04,6]heptane (8CI9CI)	92	C7H8
4.	Spiro[3.3]hepta-1,5-diene (8CI9CI)	92	C7H8
5.	Cyclobutene, 2-propenylidene- (9CI)	92	C7H8
6.	Bicyclo[2.2.1]hepta-2,5-diene (9CI)	92	C7H8
7.	Bicyclo[3.2.0]hepta-2,6-diene (8CI9CI)	92	C7H8

Sampl file: >FC315 Spectrum #: 22
Search speed: 2 Tilting option: S No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	96*	108883	7659	"BIGDB	82	8	1	0	67	3	72		96	
2.	79*	544252	7652	"BIGDB	62	23	3	0	100	8	48		37	

3.	70*	278068	2781	"BIGDB	38	44	3	0	100	9	42	15
4.	58*	22635785	7655	"BIGDB	51	30	2	1	71	18	25	27
5.	52*	52097855	7657	"BIGDB	45	34	2	0	85	21	22	24
6.	41*	121460	2780	"BIGDB	47	48	1	0	53	45	14	31
7.	38*	2422868	7654	"BIGDB	30	24	2	0	100	27	14	15



Retention time = 10.08

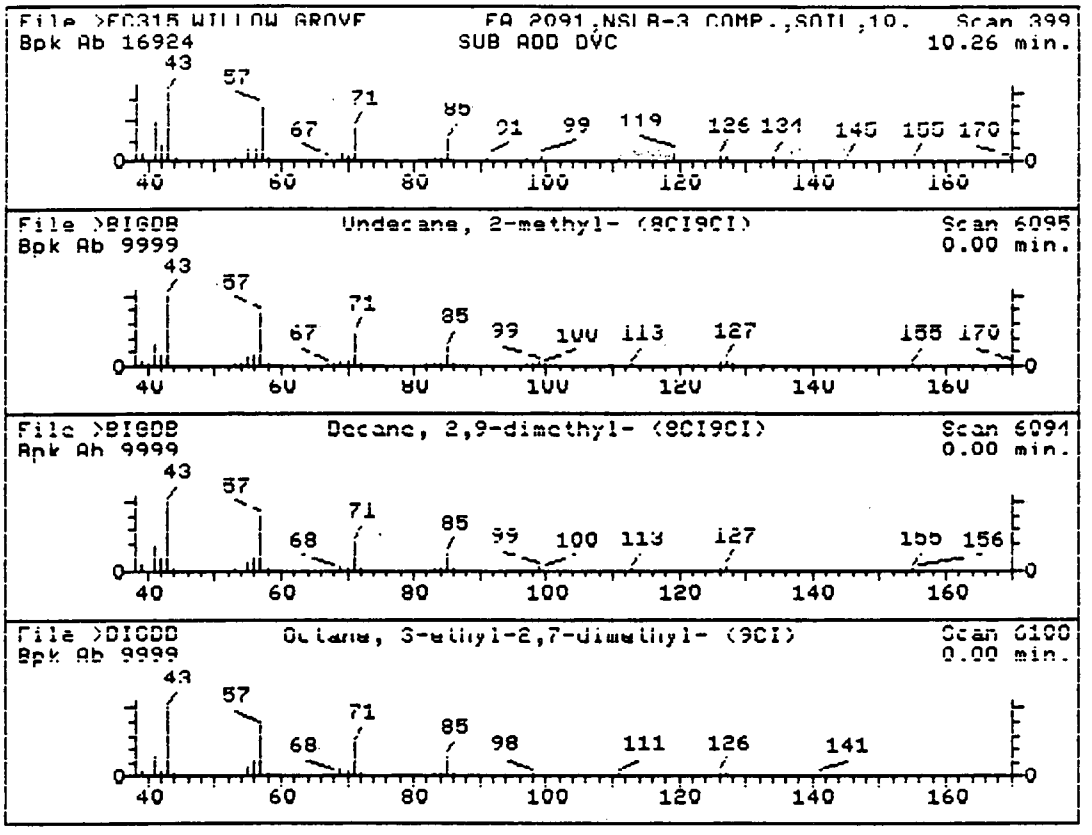
Area = 391413.0 Tentative Concentration is 1100.00

1. Undecane, 6-methyl- (8CI9CI)	170	C12H26
2. Decane, 2,5-dimethyl- (8CI9CI)	170	C12H26
3. 5-Hexen-3-one (8CI9CI)	98	C6H10O
4. Heptane, 4-(1-methylethyl)- (9CI)	142	C10H22
5. Heptane, 2,3,5-trimethyl- (8CI9CI)	142	C10H22
6. Decane, 2,5,9-trimethyl- (9CI)	184	C13H28
7. Heptane, 2,2,4,6,6-pentamethyl- (8CI9CI)	170	C12H26

UNIDENTIFIED ALKANE

Sampl file: >FC315 Spectrum #: 389
S arch speed: 2 Tilting option: S No. of ion ranges searched: 73

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	71*	17302339	8567	"BIGDB	36	42	0	0	75	13	38	39
2.	66*	17312504	8753	"BIGDB	62	27	2	0	86	19	31	49
3.	52*	24253303	8521	"BIGDB	23	49	2	0	88	19	20	13
4.	52	52896874	8582	"BIGDB	56	27	2	0	69	17	20	19
5.	48	20278857	1203	"BIGDB	50	26	1	0	88	21	17	19
6.	46	62108229	3927	"BIGDB	50	41	2	0	88	21	17	17
7.	44	13475826	1186	"BIGDB	43	32	1	0	85	23	17	15



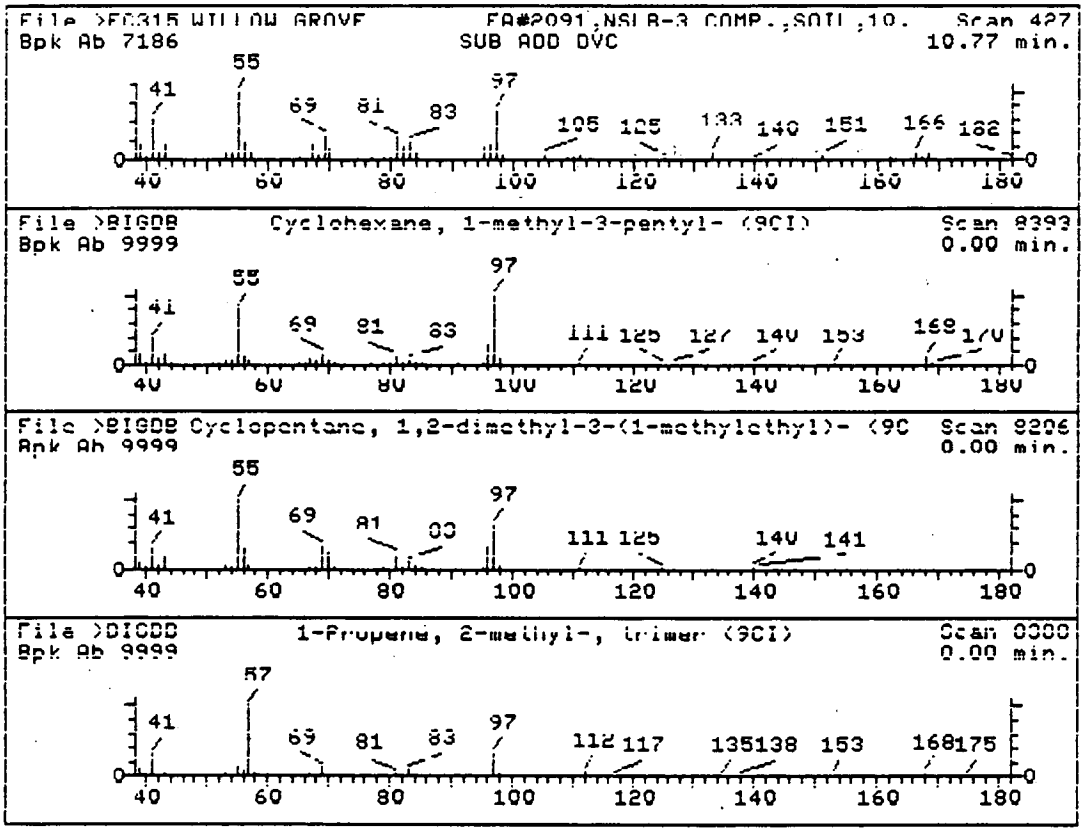
Retention time = 10.26

Area = 261511.0 Tentative Concentration is 710.00

1. Undecane, 2-methyl- (8CI9CI)	170	C12H26
2. Decane, 2,9-dimethyl- (8CI9CI)	170	C12H26
3. Octane, 3-ethyl-2,7-dimethyl- (9CI)	170	C12H26
4. D cane, 2,4,6-trimethyl- (9CI)	184	C13H28
5. Dodecane, 2-methyl- (8CI9CI)	184	C13H28
6. Decane, 3-methyl- (8CI9CI)	156	C11H24
7. Undecane, 3,7-dimethyl- (8CI)	184	C13H28

Sample file: >FC315 Spectrum #: 399
Search speed: 2 Tilting option: S No. of ion ranges searched: 59

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	94*	7045718	6095	"BIGDB	82	12	1	0	100	10	68	93		
2.	79	1002171	6094	"BIGDB	75	17	0	0	87	11	43	66		
3.	71	62183555	6108	"BIGDB	64	27	1	0	79	14	38	30		
4.	67	62108274	6107	"BIGDB	74	30	2	0	84	12	34	27		
5.	67	1560970	6149	"BIGDB	70	31	2	0	91	15	34	25		
6.	67	13151343	13424	"BIGDB	61	33	2	0	79	14	34	21		
7.	67	17301290	6097	"BIGDB	65	38	1	0	73	12	34	23		



Retention time = 10.77

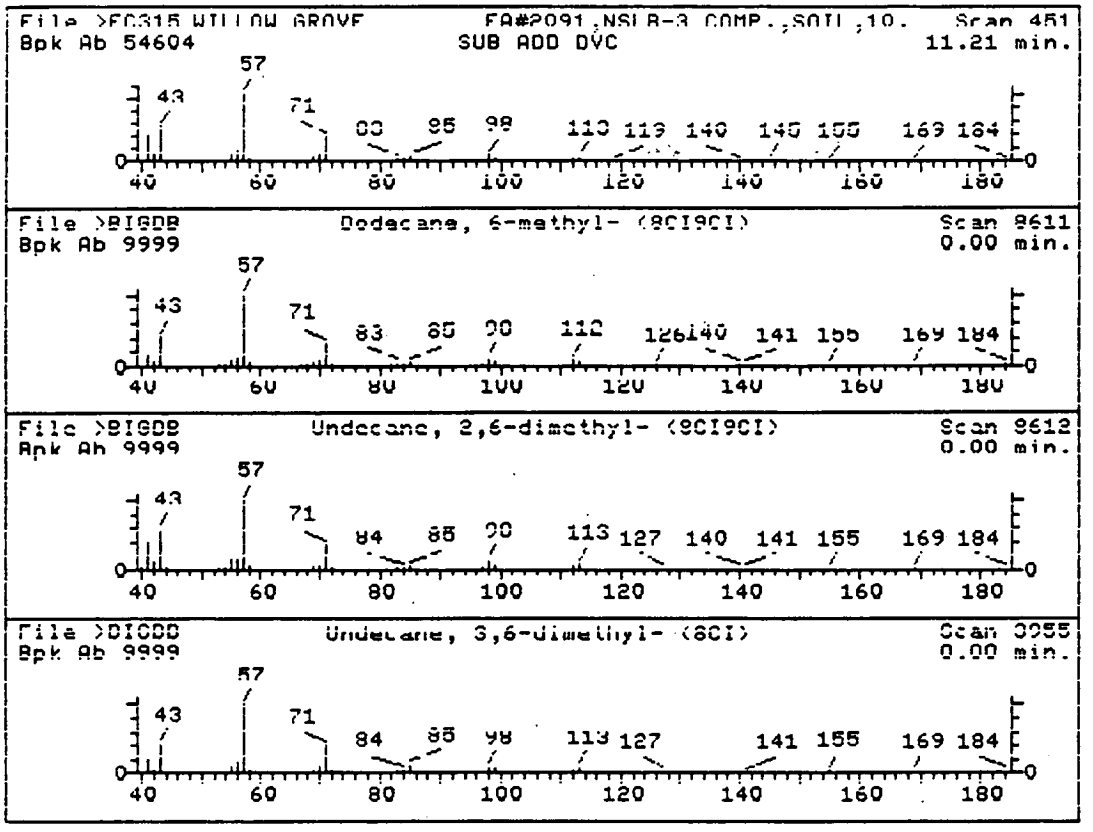
Area = 267361.0 Tentative Concentration is 720.00

1.	Cyclohexane, 1-methyl-3-pentyl- (9CI)	168	C12H24
2.	Cyclopentane, 1,2-dimethyl-3-(1-methylethyl)- (9CI)	140	C10H20
3.	1-Propene, 2-methyl-, trimer (9CI)	0	
4.	Cyclohexane, 1-methyl-4-(1-methylbutyl)- (9CI)	168	C12H24
5.	Cyclohexane, 1-ethyl-1-methyl- (8CI9CI)	126	C9H18
6.	2H-Pyran-2-one, 5,6-dihydro-6-pentyl-, (R)- (9CI)	168	C10H16O2
7.	Cyclopentane, 1,1'-ethylidenebis- (9CI)	166	C12H22

Unknown

Sample file: >FC315 Spectrum #: 427
Search speed: 2 Tilting option: S No. of ion ranges searched: 55

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	43*	54411028	8393	"BIGDB	35	62	0	0	72	37	17			32
2.	24	489203	8206	"BIGDB	41	56	1	0	70	42	8			12
3.	20*	7756947	8388	"BIGDB	35	48	2	0	232	53	5			17
4.	20*	54411006	8391	"BIGDB	47	60	2	0	83	55	5			19
5.	20*	4926903	8248	"BIGDB	25	66	0	0	72	55	5			18
6.	20*	51154962	8236	"BIGDB	25	68	3	0	72	55	5			13
7.	20*	4413212	8238	"BIGDB	28	71	1	0	52	53	5			15



Retention time = 11.21

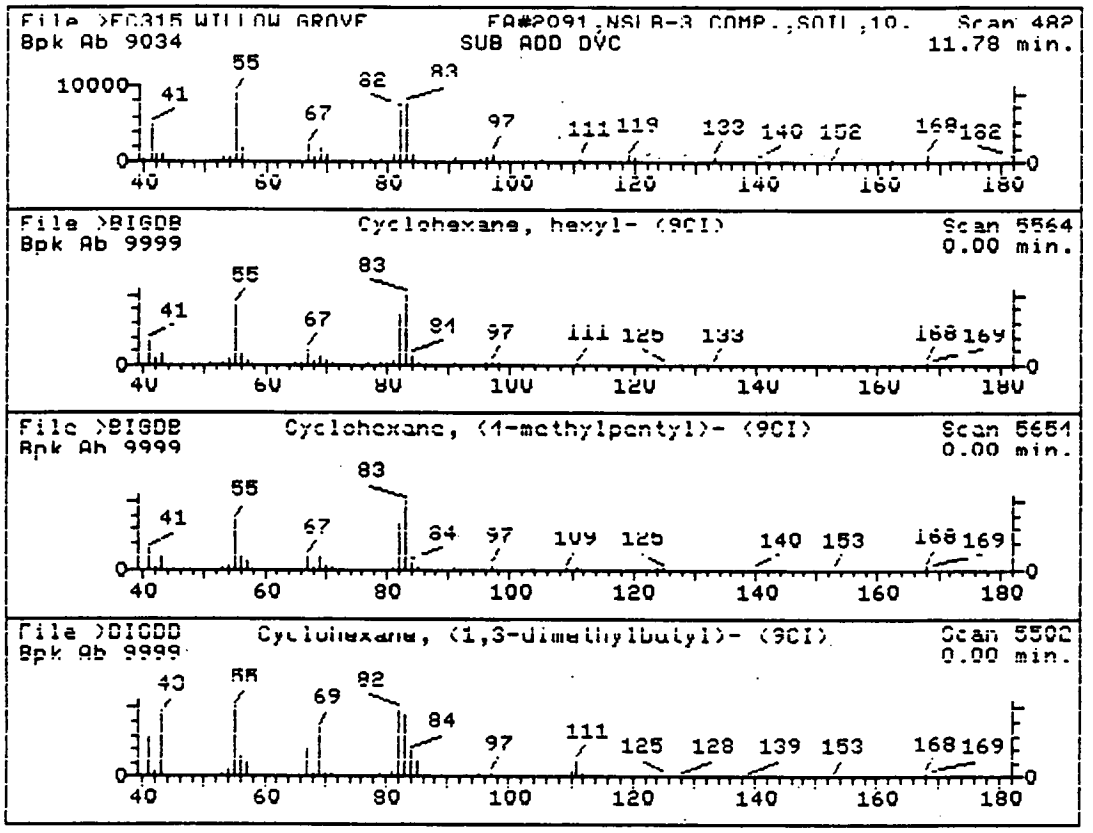
Area = 499301.0 Tentative Concentration is 1400.00

1. Dodecane, 6-methyl- (8CI9CI) 184 C13H28
2. Undecane, 2,6-dimethyl- (8CI9CI) 184 C13H28
3. Undecane, 3,6-dimethyl- (8CI) 184 C13H28
4. Undecane, 2,5-dimethyl- (8CI9CI) 184 C13H28
5. Undecane, 4,6-dimethyl- (8CI) 184 C13H28
6. Undecane, 3,5-dimethyl- (8CI) 184 C13H28
7. Decane, 2,6,8-trimethyl- (9CI) 184 C13H28

UNIDENTIFIED ALKANE

Sample file: >FC315 Spectrum #: 451
Search speed: 2 Tilting option: S No. of ion ranges searched: 68

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	96*	6044719	8611	"BIGDB	80	17	0	0	78	3	72			94
2.	94*	17301234	8612	"BIGDB	75	27	0	0	69	8	68			93
3.	87*	17301289	3955	"BIGDB	67	30	2	0	96	3	63			49
4.	84*	17301223	10849	"BIGDB	75	24	1	2	82	8	55			63
5.	76*	17312822	3957	"BIGDB	53	45	2	0	69	7	45			28
6.	76*	17312811	8754	"BIGDB	51	47	2	0	100	8	45			26
7.	67*	62108263	3928	"BIGDB	45	47	2	0	100	12	34			24



Retention time = 11.78

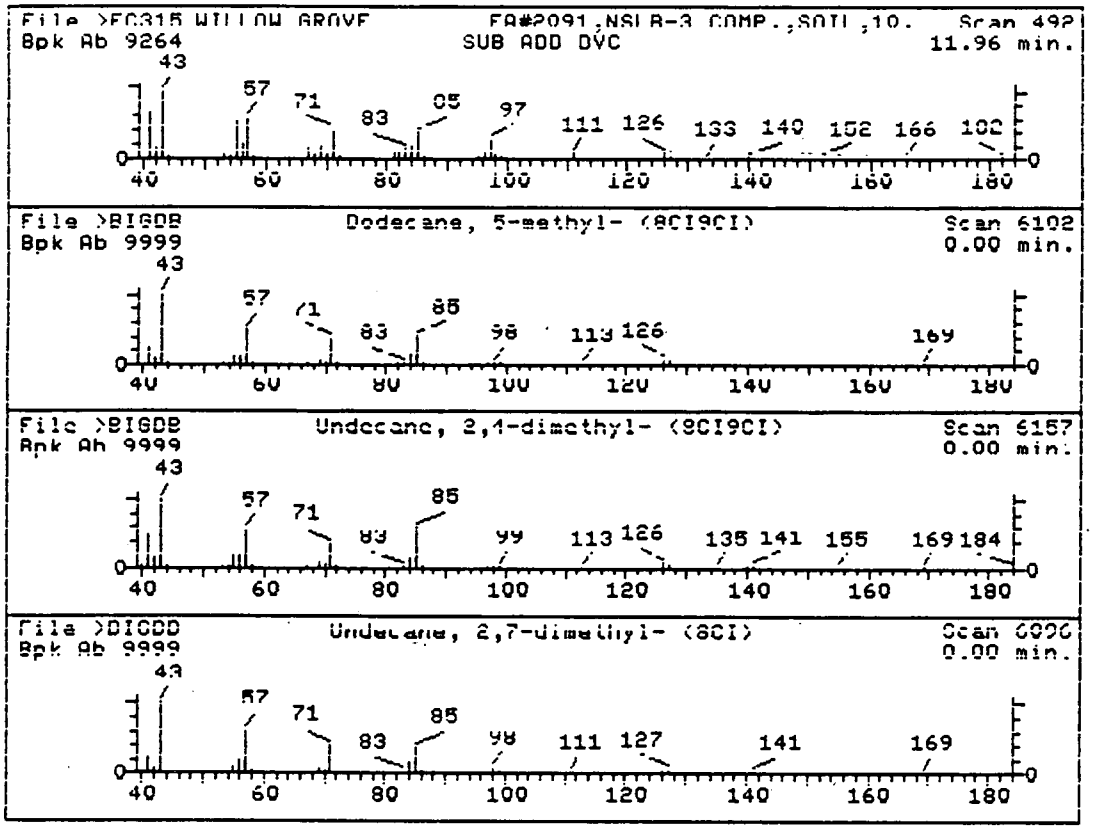
Area = 296023.0 Tentative Concentration is 800.00

1.	Cyclohexane, hexyl- (9CI)	168	C12H24
2.	Cyclohexane, (4-methylpentyl)- (9CI)	168	C12H24
3.	Cyclohexane, (1,3-dimethylbutyl)- (9CI)	168	C12H24
4.	Cyclohexane, (3-methylpentyl)- (9CI)	168	C12H24
5.	1-Azabicyclo[3.1.0]hexane (8CI9CI)	83	C5H9N
6.	Cyclohexane, 2-propenyl- (9CI)	124	C9H16
7.	Cyclopentane, 1-ethyl-1-methyl- (8CI9CI)	112	C8H16

Unknown

Sampl file: >FC315 Spectrum #: 482
Search speed: 2 Tilting option: S No. of ion ranges search d: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	67*	4292755	5564	"BIGDB	45	50	1	0	86	15	34	27
2.	60*	61142209	5654	"BIGDB	49	48	3	1	95	13	30	14
3.	52*	61142196	5502	"BIGDB	36	76	3	0	77	17	20	13
4.	38*	61142389	5634	"BIGDB	47	50	1	0	86	44	12	29
5.	36*	285767	5336	"BIGDB	25	54	3	0	146	28	14	13
6.	31	2114423	5622	"BIGDB	58	41	2	0	86	36	10	17
7.	30*	16747505	5582	"BIGDB	51	53	2	0	86	47	10	25



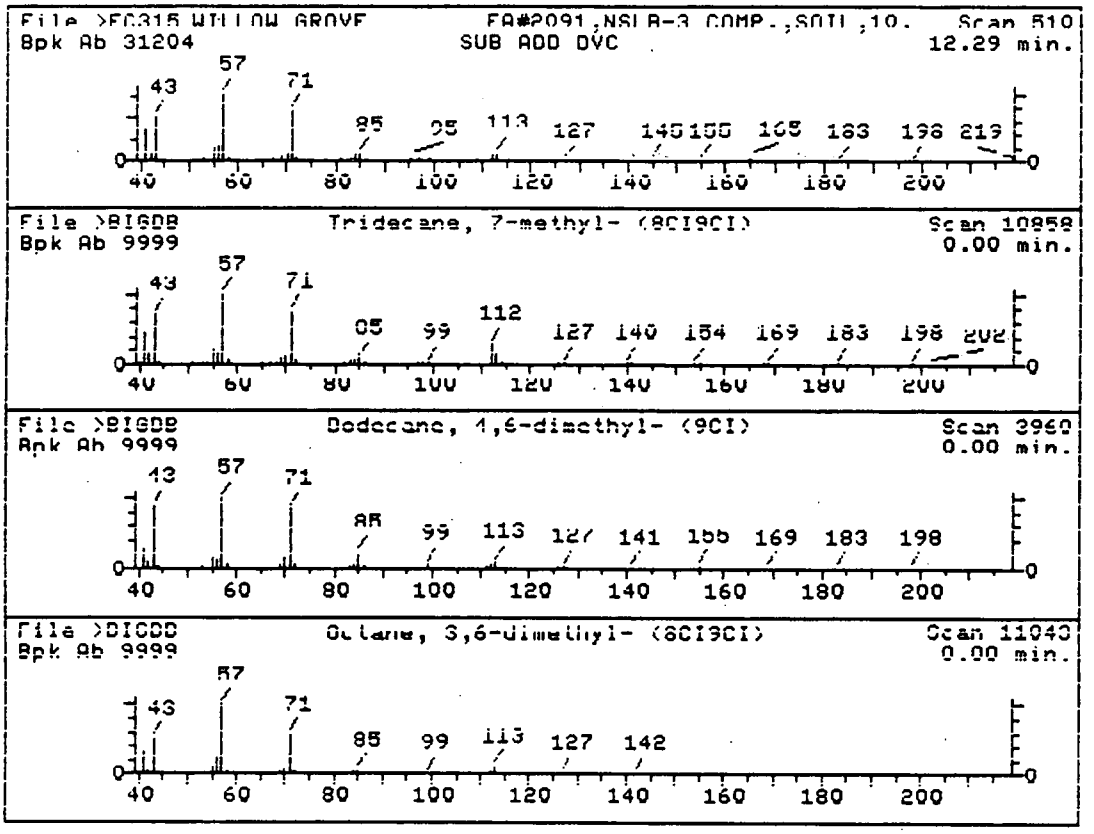
Retention time = 11.96

Area = 322285.0 Tentative Concentration is 870.00

1. Dodecane, 5-methyl- (8CI9CI)	184	C13H28
2. Und cane, 2,4-dimethyl- (8CI9CI)	184	C13H28
3. Undecane, 2,7-dimethyl- (8CI)	184	C13H28
4. Hexane, 2,3,4-trimethyl- (8CI9CI)	128	C9H20
5. Decanedioic acid, didecyl ester (9CI) Unknown	482	C30H58O4
6. Octane, 4-methyl- (8CI9CI)	128	C9H20
7. Octane, 2,4,6-trimethyl- (9CI)	156	C11H24

Sample file: >FC315 Spectrum #: 492
Search speed: 2 Tilting option: S No. of ion ranges searched: 50

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	59	17453939	6102	"BIGDB	64	36	0	0	100	24	27		39	
2.	47*	17312800	6157	"BIGDB	62	46	1	1	77	43	17		50	
3.	46	17301245	6096	"BIGDB	68	32	2	0	99	30	19		24	
4.	36*	921471	5917	"BIGDB	39	51	2	0	132	35	12		19	
5.	36	2432895	6142	"BIGDB	73	97	3	0	59	30	14		13	
6.	33	2216344	5921	"BIGDB	49	42	2	0	100	35	12		16	
7.	27	62016379	6004	"BIGDB	45	40	2	0	160	41	8		15	



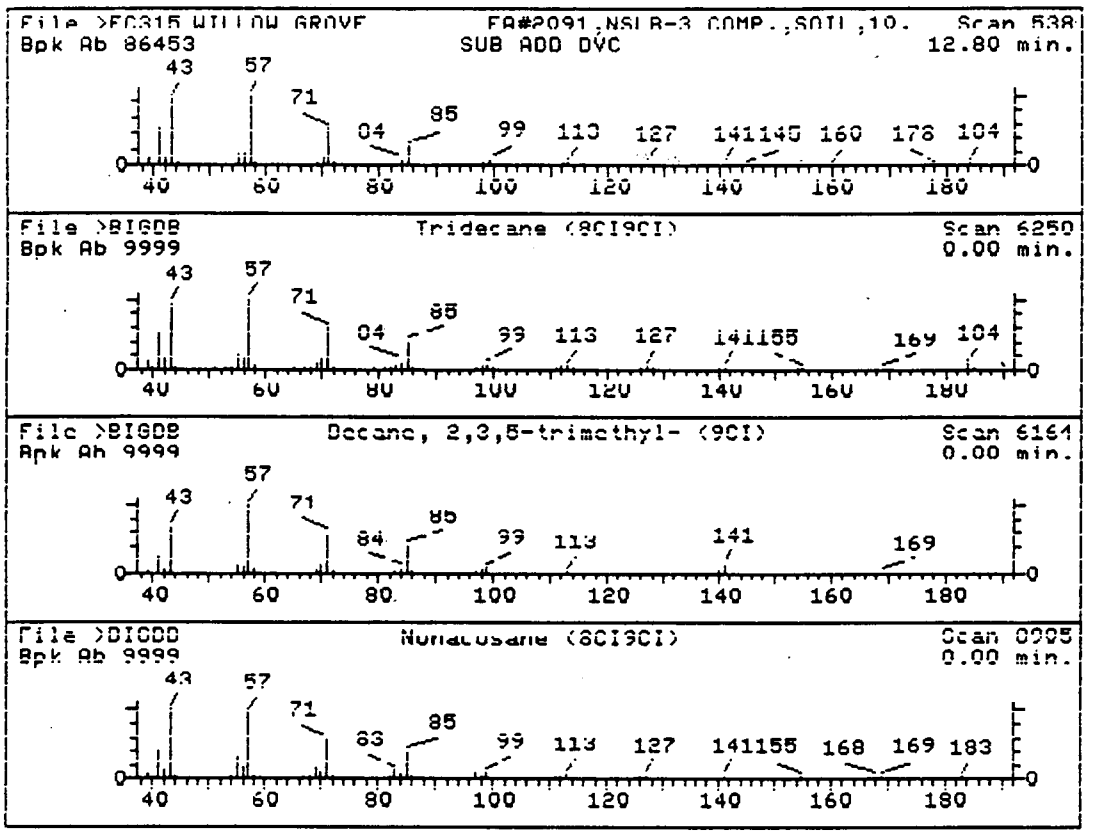
Ret ntion time = 12.29

Area = 536847.0 Tentative Concentration is 1500.00

1. Tridecane, 7-methyl- (8CI9CI)	198	C14H30
2. Dodecane, 4,6-dimethyl- (9CI)	198	C14H30
3. Octane, 3,6-dimethyl- (8CI9CI)	142	C10H22
4. Octadecane, 2,6-dimethyl- (9CI)	282	C20H42
5. Nonane, 3,7-dimethyl- (8CI9CI)	156	C11H24
6. Octane, 2,3,7-trimethyl- (9CI)	156	C11H24
7. Octane, 2,3,6-trimethyl- (9CI)	156	C11H24

Sampl file: >FC315 Spectrum #: 510
Search speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	81*	26730143	10858	"BIGDB	75	36	1	0	83	16	45	73
2.	63*	61141728	3960	"BIGDB	61	49	0	0	52	48	20	73
3.	60	15869940	11043	"BIGDB	52	37	1	0	93	12	30	19
4.	60	75163972	11258	"BIGDB	75	64	3	0	78	11	30	13
5.	59*	17302328	6100	"BIGDB	51	35	2	0	80	25	27	33
6.	58	62016346	3962	"BIGDB	44	49	0	0	78	20	25	25
7.	58	62016335	3961	"BIGDB	61	31	1	0	85	17	25	27



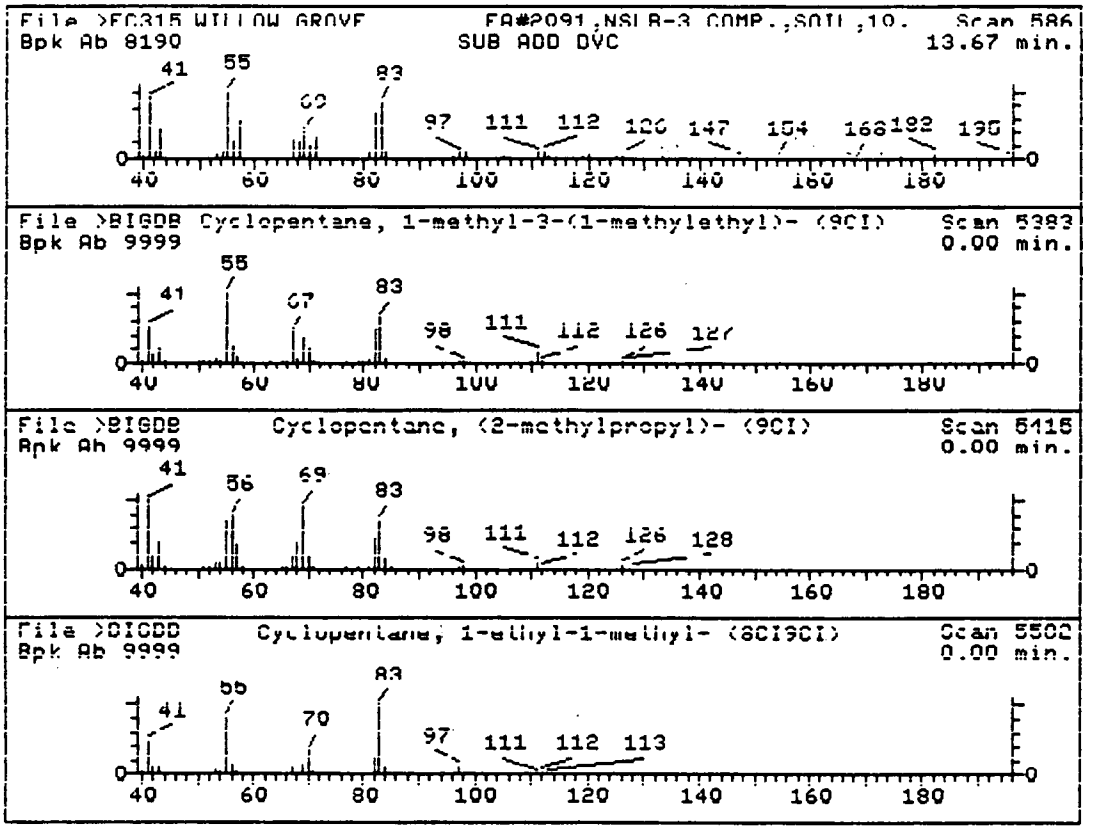
Retention time = 12.80

Area = 999660.0 Tentative Concentration is 2700.00

1.	Tridecane (8CI9CI)	184 C13H28
2.	Decane, 2,3,5-trimethyl- (9CI)	184 C13H28
3.	Nonacosane (8CI9CI)	408 C29H60
4.	Tritetracontane (8CI9CI)	604 C43H88
5.	Decane, 6-ethyl-2-methyl- (9CI)	184 C13H28
6.	Undecane, 3,6-dimethyl- (8CI)	184 C13H28
7.	Undecane, 3,5-dimethyl- (8CI)	184 C13H28

Sample file: >FC315 Spectrum #: 538
Search speed: 2 Tilting option: S No. of ion ranges searched: 55

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	94*	629505	6250	"BIGDB	105	8	1	2	79	7	68			93
2.	79	62238113	6164	"BIGDB	74	29	1	0	71	8	48			35
3.	78	630035	8905	"BIGDB	61	84	2	0	74	5	55			12
4.	78	7098217	6150	"BIGDB	61	107	2	0	67	5	55			12
5.	76	62108218	6163	"BIGDB	63	36	2	0	100	7	45			22
6.	71*	17301289	3955	"BIGDB	56	41	2	0	100	13	38			34
7.	71*	17312811	8754	"BIGDB	55	43	2	0	100	13	38			32



Retention time = 13.67

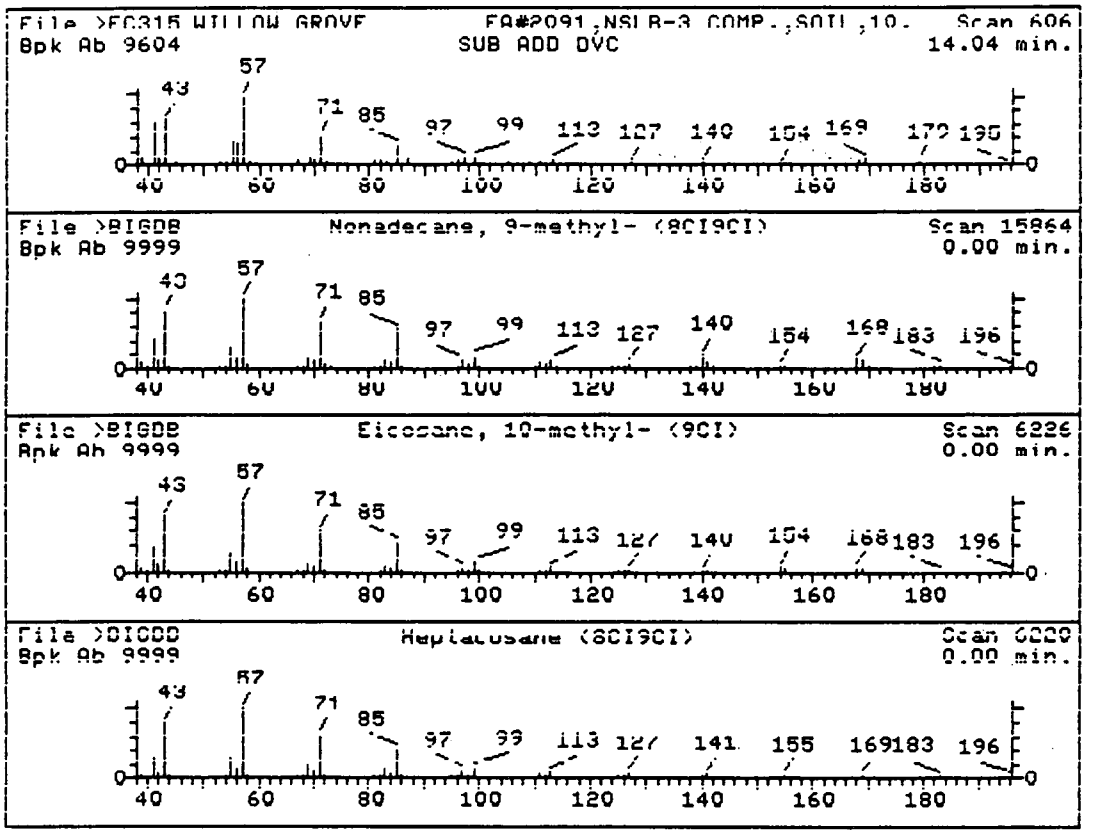
Area = 303326.0 Tentative Concentration is 1900.00

1. Cyclopentane, 1-methyl-3-(1-methylethyl)- (9CI)	126	C9H18
2. Cyclopentane, (2-methylpropyl)- (9CI)	126	C9H18
3. Cyclopentane, 1-ethyl-1-methyl- (8CI9CI)	112	C8H16
4. 2-Octenal, (E)- (8CI9CI)	126	C8H14O
5. Cyclohexane, (1-methylethyl)- (9CI)	126	C9H18
6. 6-Tridecene (8CI9CI)	182	C13H26
7. Cyclohexane, ethyl- (8CI9CI)	112	C8H16

Unknown

Sample file: >FC315 Spectrum #: 586
Search speed: 2 Tilting option: S No. of ion ranges searched: 56

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	55*	53771883	5383	"BIGDB	52	50	2	0	94	23	22		27	
2.	31*	3788327	5415	"BIGDB	49	69	2	0	65	44	12		22	
3.	30*	16747505	5582	"BIGDB	40	64	1	0	85	46	10		21	
4.	30*	2548870	3627	"BIGDB	30	90	3	0	100	35	12		13	
5.	29	696297	5414	"BIGDB	56	47	1	0	78	36	10		15	
6.	28*	24949380	21822	"BIGDB	45	64	0	-2	27	52	8		34	
7.	26*	1678917	5609	"BIGDB	26	73	2	0	60	42	8		14	



Retention time = 14.04

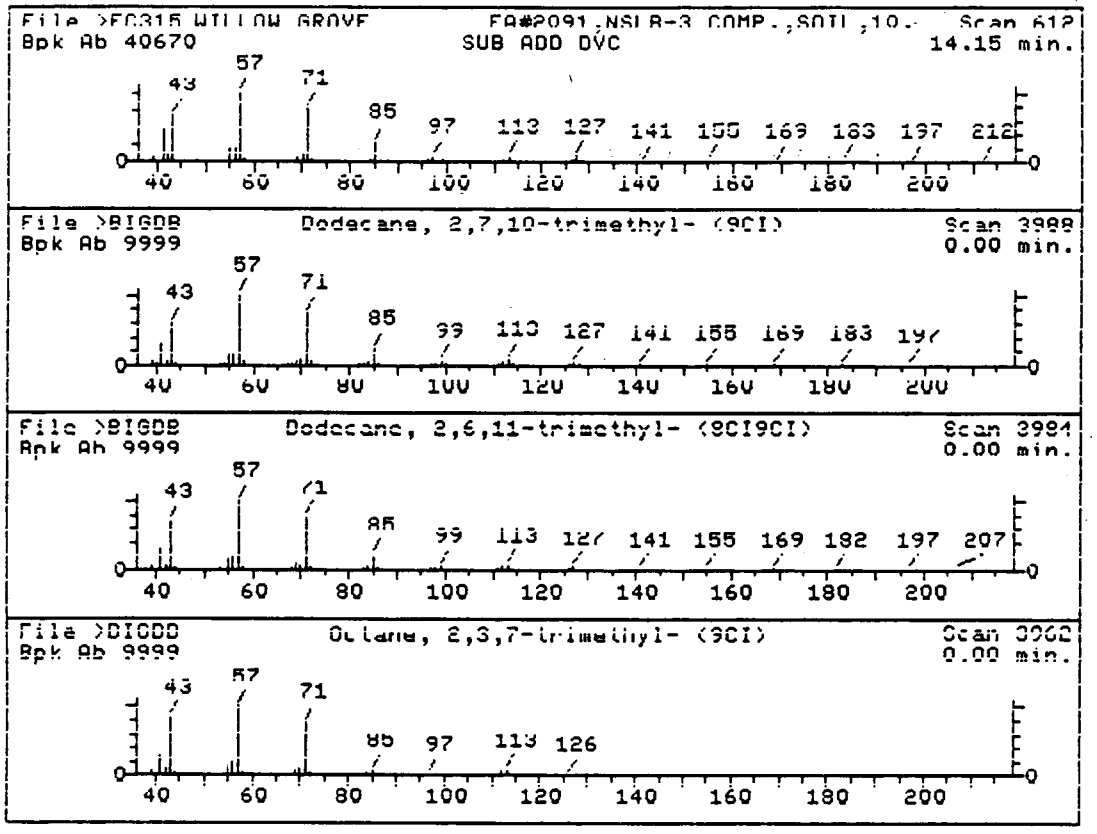
Area = 196550.0 Tentative Concentration is 1200.00

1. Nonadecane, 9-methyl- (8CI9CI)	282	C20H42
2. Eicosane, 10-methyl- (9CI)	296	C21H44
3. Heptacosane (8CI9CI)	380	C27H56
4. Pentatriacontane (8CI9CI)	492	C35H72
5. Tetratetracontane (8CI9CI)	618	C44H90
6. Decane, 3,8-dimethyl- (8CI9CI)	170	C12H26
7. Tridecane, 3-methyl- (8CI9CI)	198	C14H30

UNIDENTIFIED ALKANE

Sample file: >FC315 Spectrum #: 606
Search speed: 2 Tilting option: S No. of ion ranges searched: 71

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	60	13287246	15864	"BIGDB	76	69	2	0	52	14	30	19
2.	50	54833237	6226	"BIGDB	81	52	2	0	69	23	22	22
3.	43	593497	6220	"BIGDB	65	88	2	0	67	25	17	14
4.	43	630079	6147	"BIGDB	64	87	2	0	68	25	17	14
5.	42	7098228	8906	"BIGDB	62	94	2	0	70	25	17	13
6.	41	17312559	11149	"BIGDB	70	22	1	1	88	38	14	28
7.	41	6418413	8959	"BIGDB	71	39	3	0	82	23	17	12



Retention time = 14.15

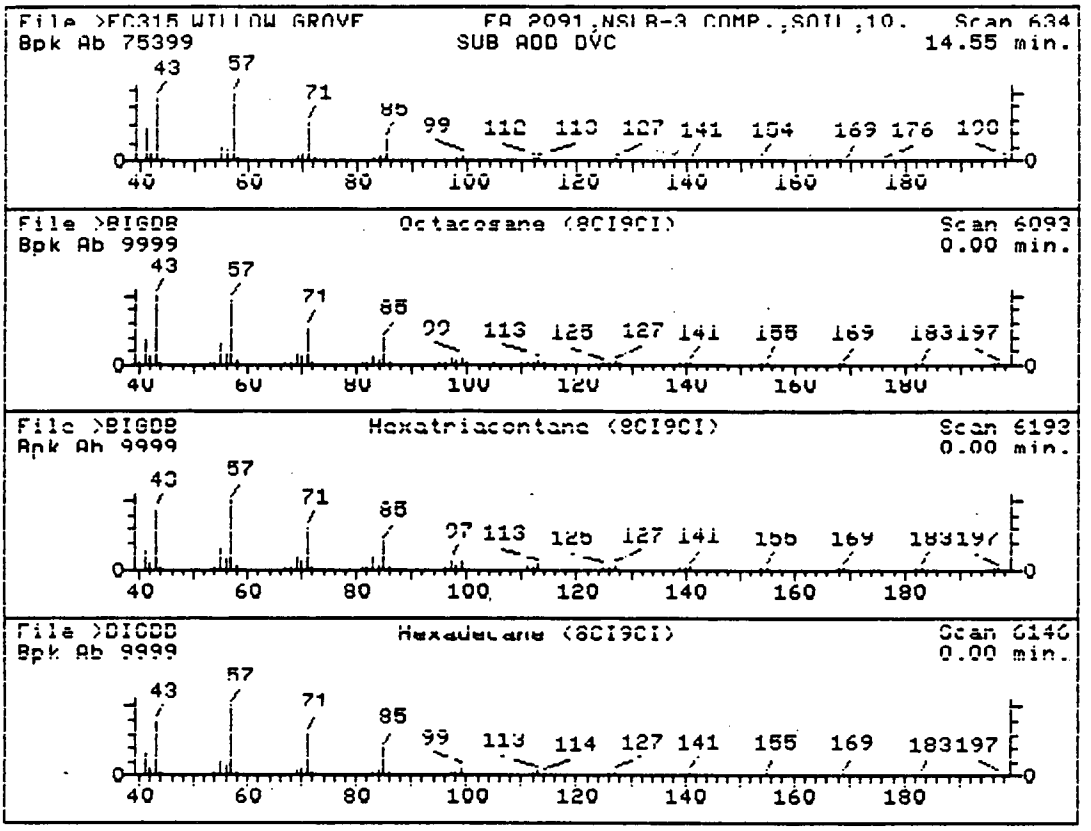
Area = 403532.0 Tentative Concentration is 2500.00

1. Dodecane, 2,7,10-trimethyl- (9CI) 212 C15H32
2. Dodecane, 2,6,11-trimethyl- (8CI9CI) 212 C15H32
3. Octane, 2,3,7-trimethyl- (9CI) 156 C11H24
4. Nonane, 5-butyl- (8CI9CI) 184 C13H28
5. Nonane, 3-methyl-5-propyl- (8CI) 184 C13H28
6. Nonane, 5-(1-methylpropyl)- (9CI) 184 C13H28
7. Nonane, 3,7-dimethyl- (8CI9CI) 156 C11H24

UNIDENTIFIED trimethyl Dodecane

Sample file: >FC315 Spectrum #: 612
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	89	74645980	3988	"BIGDB	98	11	1	0	100	0	66			71
2.	89	31295564	3984	"BIGDB	91	15	1	0	98	0	66			60
3.	75	62016346	3962	"BIGDB	74	19	0	0	80	18	35			65
4.	73*	17312639	13257	"BIGDB	65	48	1	0	52	23	32			65
5.	70	31081182	6159	"BIGDB	67	38	2	0	70	10	42			19
6.	70	62185540	13289	"BIGDB	68	54	2	0	55	10	42			15
7.	69*	17302328	6100	"BIGDB	57	29	0	0	73	34	26			69



Retention time = 14.55

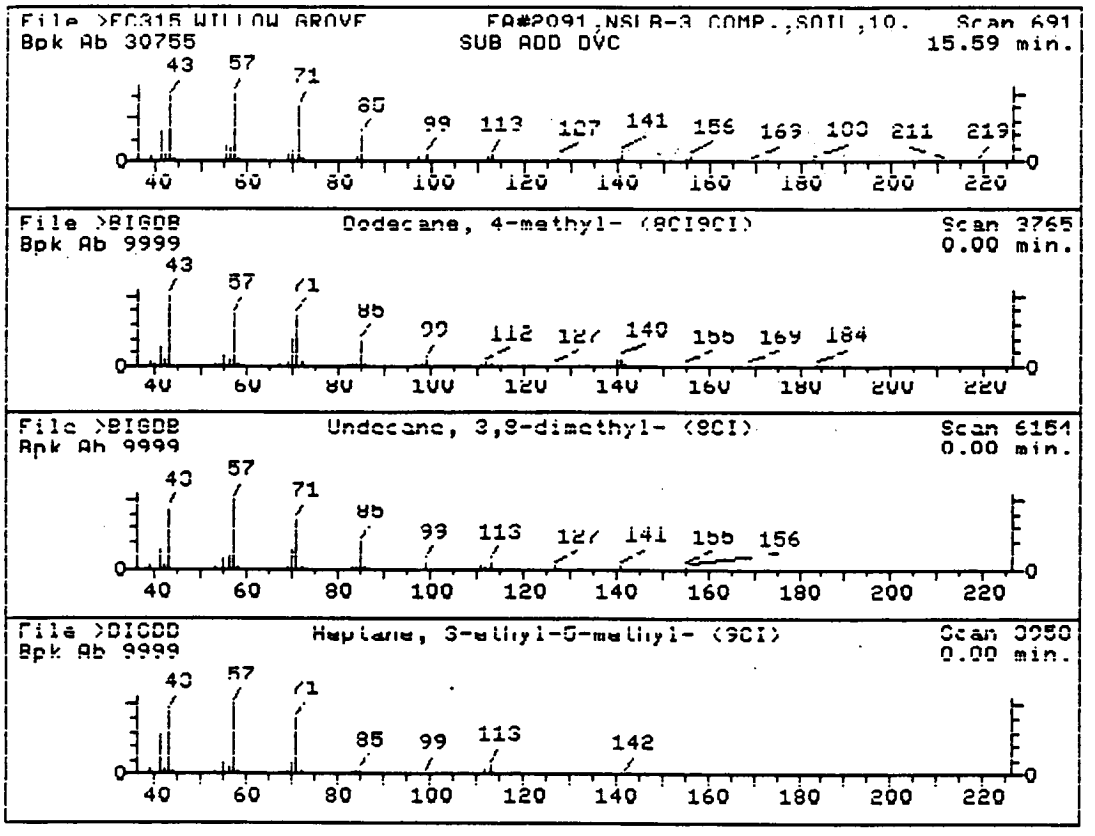
Area = 1151980. Tentative Concentration is 7100.00

1.	Octacosane (8CI9CI)	394	C28H58
2.	Hexatriacontane (8CI9CI)	506	C36H74
3.	Hexadecane (8CI9CI)	226	C16H34
4.	Eicosane, 10-methyl- (9CI)	296	C21H44
5.	Dodecane (8CI9CI)	170	C12H26
6.	Decane, 2,3,5-trimethyl- (9CI)	184	C13H28
7.	Dodecane, 4,6-dimethyl- (9CI)	198	C14H30

UNIDENTIFIED ALKANE

Sample file: >FC315 Spectrum #: 634
Search speed: 2 Tilting option: S No. of ion ranges searched: 61

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	83	630024	6093	"BIGDB	94	43	2	3	81	5	57	22
2.	78	630068	6193	"BIGDB	63	99	2	0	78	5	55	13
3.	78	544763	6146	"BIGDB	82	38	2	2	100	5	55	17
4.	78	54833237	6226	"BIGDB	68	65	2	0	76	4	55	15
5.	76	112403	6229	"BIGDB	74	27	2	0	79	10	45	27
6.	76	62238113	6164	"BIGDB	74	29	2	0	82	8	45	27
7.	76*	61141728	3960	"BIGDB	74	36	0	3	73	30	37	74



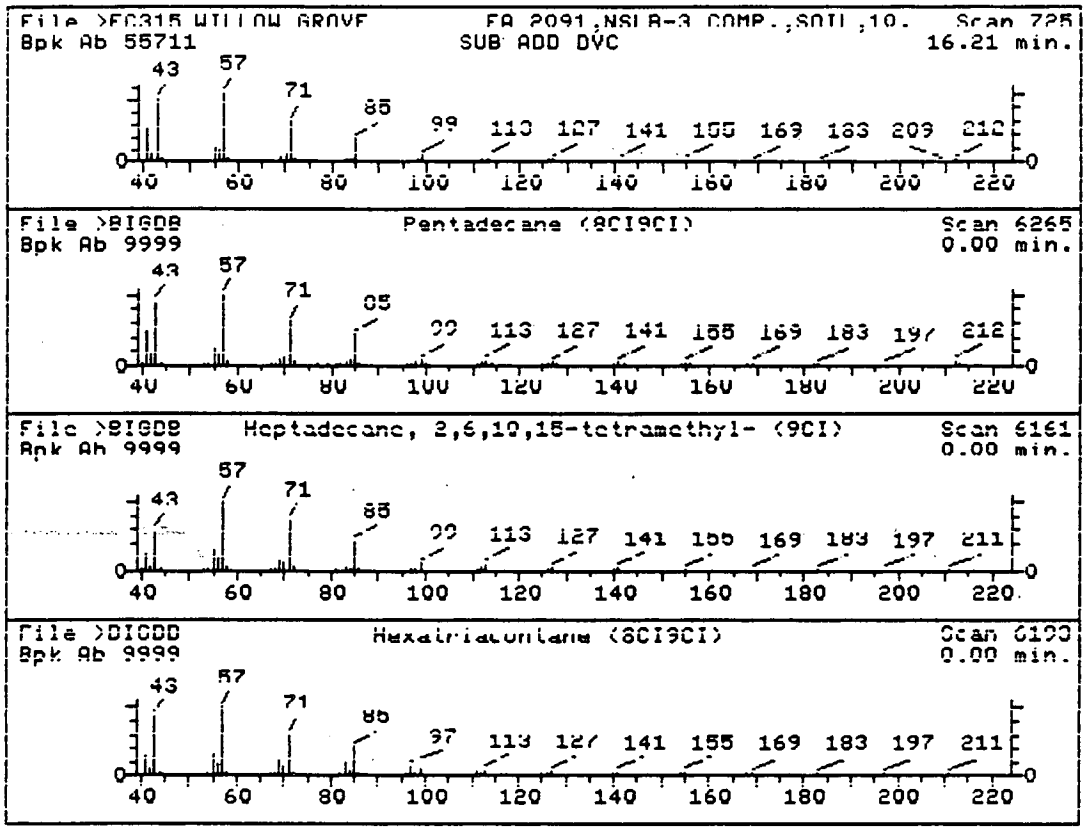
Retention time = 15.59

Area = 565484.0 Tentative Concentration is 3500.00

1. Dodecane, 4-methyl- (8CI9CI)		184 C13H28
2. Undecane, 3,8-dimethyl- (8CI)		184 C13H28
3. Heptane, 3-ethyl-5-methyl- (9CI)	UNIDENTIFIED ALKANE	142 C10H22
4. Tridecane, 6-propyl- (9CI)		226 C16H34
5. Decane, 5-propyl- (8CI)		184 C13H28
6. Decane, 2,3,5-trimethyl- (9CI)		184 C13H28
7. Hexatriacontane (8CI9CI)		506 C36H74

Sample file: >FC315 Spectrum #: 691
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	76*	6117971	3765	"BIGDB	76	30	2	0	95	12	40		59	
2.	76	17301303	6154	"BIGDB	75	33	2	0	99	7	45		25	
3.	74*	52896909	3958	"BIGDB	66	28	0	0	83	40	28		78	
4.	74*	55045108	6247	"BIGDB	69	60	2	0	79	11	39		49	
5.	71*	17312628	4003	"BIGDB	54	57	2	0	100	15	38		31	
6.	71	62238113	6164	"BIGDB	81	22	2	0	96	15	38		30	
7.	70	630068	6193	"BIGDB	64	98	2	0	90	10	42		14	



Retention time = 16.21

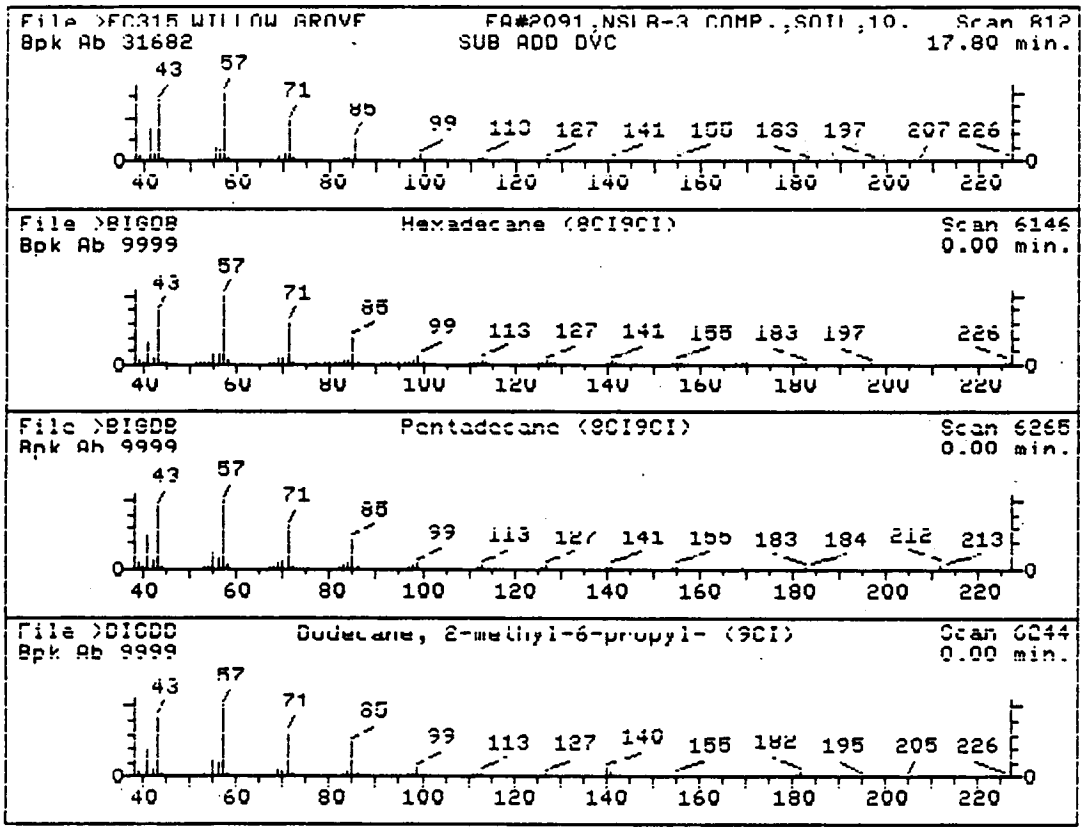
Area = 476579.0 Tentative Concentration is 2900.00

1. Pentadecane (8CI9CI)	212	C15H32
2. Heptadecane, 2,6,10,15-tetramethyl- (9CI)	296	C21H44
3. Hexatriacontane (8CI9CI)	506	C36H74
4. Tritetracontane (8CI9CI)	604	C43H88
5. Tridecane (8CI9CI)	184	C13H28
6. Octacosane (8CI9CI)	394	C28H58
7. Dodecane (8CI9CI)	170	C12H26

UNIDENTIFIED ALKANE

Sample file: >FC315 Spectrum #: 725
Search speed: 2 Tilting option: S No. of ion ranges searched: 63

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	89*	629629	6265	"BIGDB	79	41	0	0	55	38	47	94
2.	78	54833486	6161	"BIGDB	63	70	2	0	78	5	55	13
3.	78	630068	6193	"BIGDB	64	98	2	0	81	5	55	14
4.	78	7098217	6150	"BIGDB	63	105	2	0	79	5	55	13
5.	78	629505	6250	"BIGDB	75	38	2	0	78	5	55	19
6.	76	630024	6093	"BIGDB	99	38	2	2	81	6	45	26
7.	76	112403	6229	"BIGDB	74	27	2	0	76	8	45	27



R tention time = 17.80

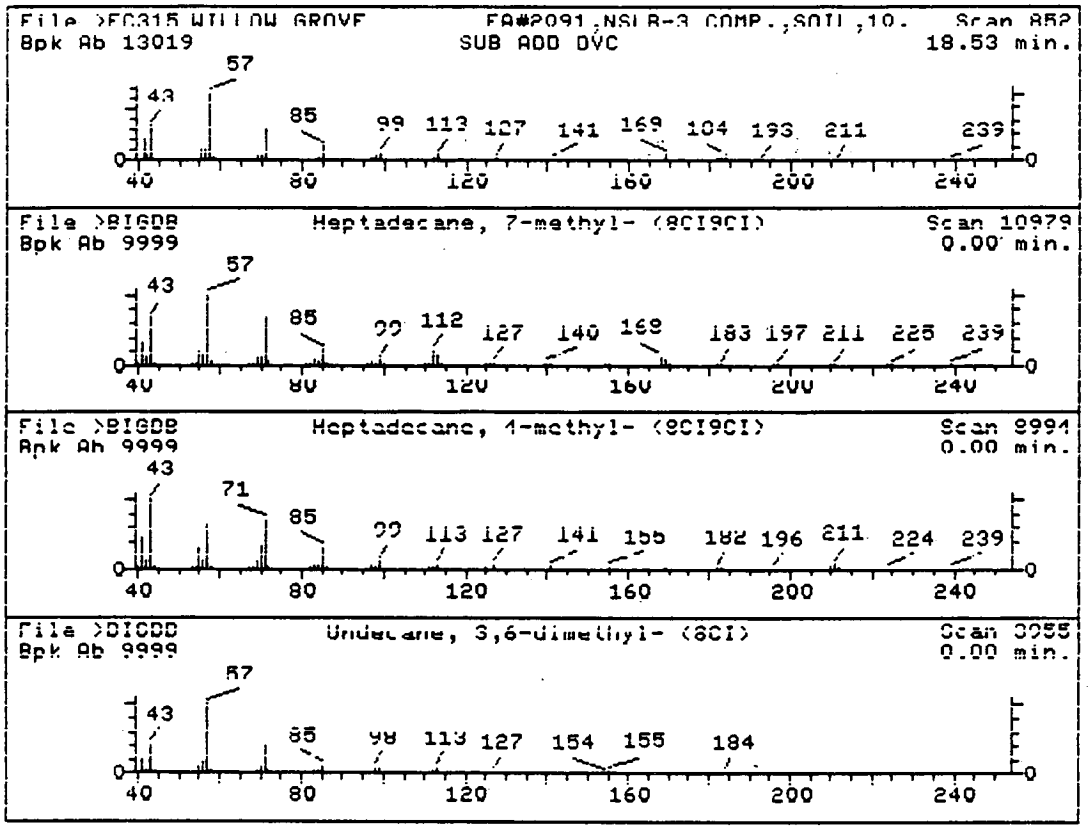
Area = 403976.0 Tentative Concentration is 2500.00

1. Hexadecane (8CI9CI)	226	C16H34
2. Pentadecane (8CI9CI)	212	C15H32
3. Dodecane, 2-methyl-6-propyl- (9CI)	226	C16H34
4. Octacosane (8CI9CI)	394	C28H58
5. Hexacosane (8CI9CI)	366	C26H54
6. Pentacosane (8CI9CI)	352	C25H52
7. Eicosane, 10-methyl- (9CI)	296	C21H44

UNIDENTIFIED ALKANE

Sample file: >FC315 Spectrum #: 812
Search speed: 2 Tilting option: S No. of ion ranges searched: 62

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	93*	544763	6146	"BIGDB	107	13	0	3	75	7	68	92
2.	86	629629	6265	"BIGDB	98	22	2	2	82	5	60	33
3.	83*	55045084	6244	"BIGDB	71	48	2	0	68	10	54	52
4.	78	630024	6093	"BIGDB	68	69	2	0	87	4	55	15
5.	78	630013	6058	"BIGDB	69	71	2	0	87	4	55	15
6.	78	629992	6092	"BIGDB	66	74	2	0	86	4	55	14
7.	78	54833237	6226	"BIGDB	62	71	2	0	66	5	55	13



Retention time = 18.53

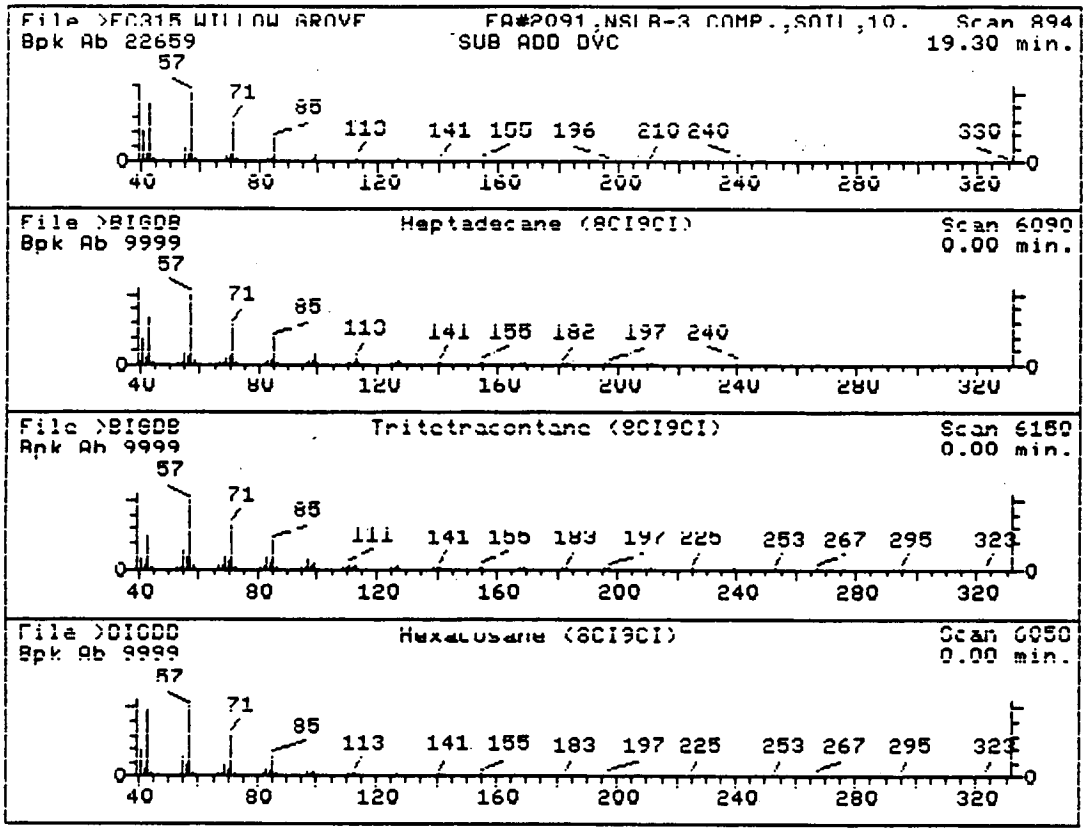
Area = 201221.0 Tentative Concentration is 1200.00

1. Heptadecane, 7-methyl- (8CI9CI)	254	C18H38
2. Heptadecane, 4-methyl- (8CI9CI)	254	C18H38
3. Undecane, 3,6-dimethyl- (8CI)	184	C13H28
4. Dodecane, 2,6,11-trimethyl- (8CI9CI)	212	C15H32
5. Tridecane, 5-propyl- (9CI)	226	C16H34
6. Tetradecane, 4-methyl- (8CI9CI)	212	C15H32
7. Dodecane, 2-methyl-8-propyl- (9CI)	226	C16H34

UNIDENTIFIED ALKANE

Sample file: >FC315 Spectrum #: 852
Search speed: 2 Tilting option: S No. of ion ranges searched: 73

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	67	20959335	10979	"BIGDB	87	48	2	0	70	15	34	25
2.	67*	26429118	8994	"BIGDB	71	59	2	0	51	27	27	52
3.	65*	17301289	3955	"BIGDB	60	37	1	0	93	34	24	56
4.	60	31295564	3984	"BIGDB	69	37	1	-2	54	13	30	16
5.	60	55045119	10998	"BIGDB	69	44	2	0	77	13	30	15
6.	60	25117242	6225	"BIGDB	75	54	2	0	51	11	30	19
7.	60	55045073	22037	"BIGDB	67	61	2	0	53	13	30	14



Retention time = 19.30

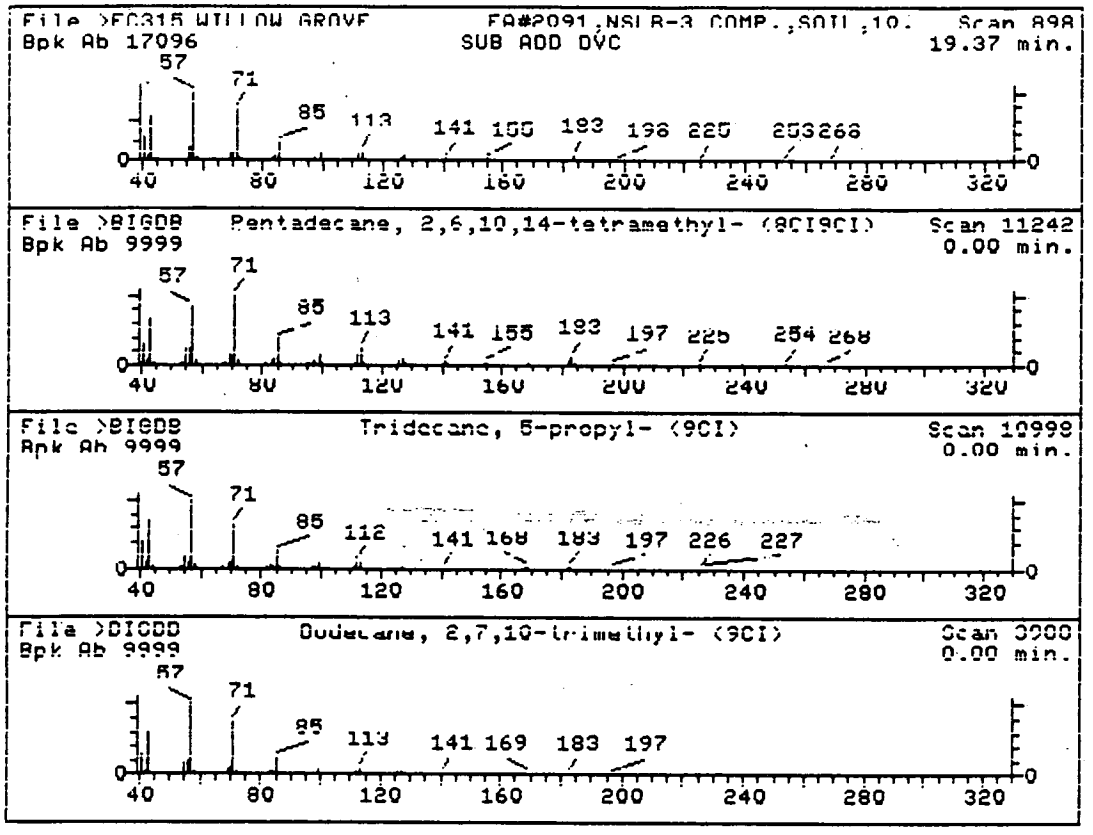
Ar a = 324251.0 Tentative Concentration is 3900.00

1.	Heptadecane (8CI9CI)	240	C17H36
2.	Tritetracontane (8CI9CI)	604	C43H88
3.	Hexacosane (8CI9CI)	366	C26H54
4.	Nonacosane (8CI9CI)	408	C29H60
5.	Heptadecane, 2,6,10,15-tetramethyl- (9CI)	296	C21H44
6.	Octacosane (8CI9CI)	394	C28H58
7.	Undecane, 2,9-dimethyl- (8CI)	184	C13H28

UNIDENTIFIED ALKANE

Sample file: >FC315 Spectrum #: 894
Search speed: 2 Tilting option: S No. of ion ranges search d: 61

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	89*	629787	6090	"BIGDB	92	29	1	1	73	2	66			74
2.	83	7098217	6150	"BIGDB	93	75	2	2	77	5	57			22
3.	78	630013	6058	"BIGDB	69	71	2	0	86	5	55			15
4.	78	630035	8905	"BIGDB	69	76	2	0	86	5	55			15
5.	78	54833486	6161	"BIGDB	62	71	2	0	70	4	55			13
6.	78	630024	6093	"BIGDB	89	48	2	1	82	4	55			19
7.	78	17301267	8938	"BIGDB	61	40	2	0	99	5	55			17



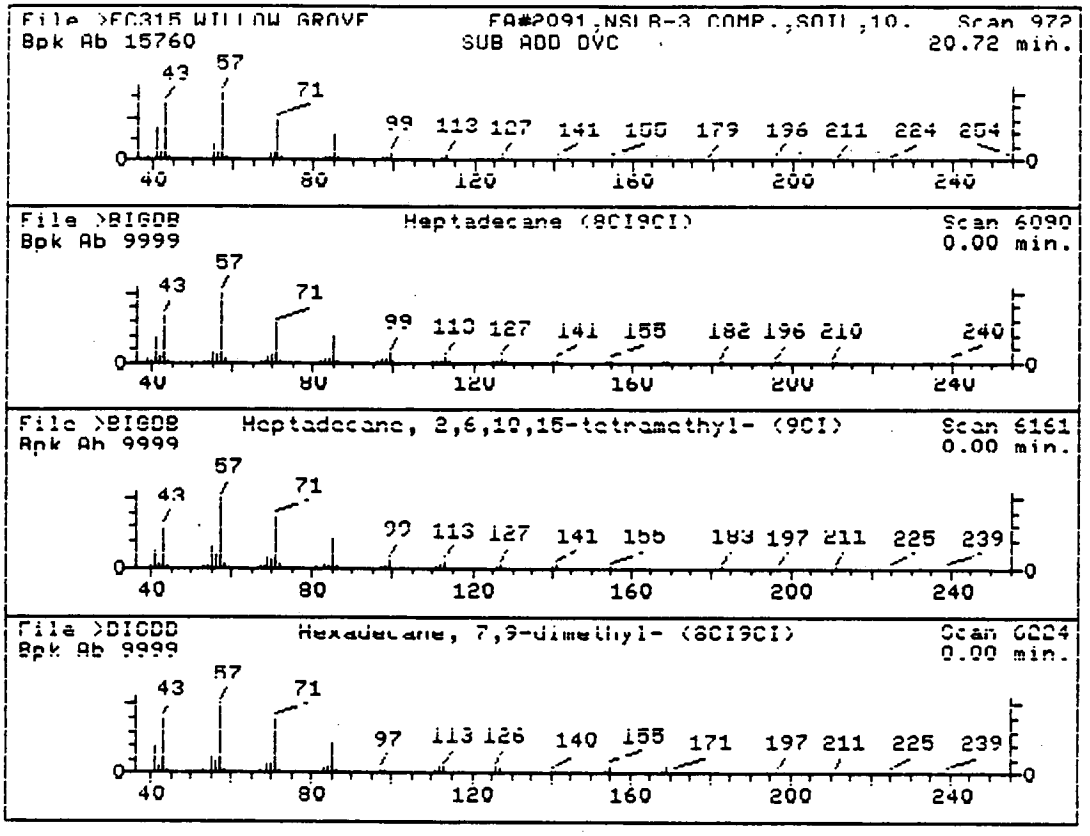
Retention time = 19.37

Area = 207356.0 Tentative Concentration is 2500.00

1.	Pentadecane, 2,6,10,14-tetramethyl- (8CI9CI)	268	C19H40
2.	Tridecane, 5-propyl- (9CI)	226	C16H34
3.	Dodecane, 2,7,10-trimethyl- (9CI)	212	C15H32
4.	Dodecane, 2,6,10-trimethyl- (8CI9CI)	212	C15H32
5.	Octadecane, 2,6-dimethyl- (9CI)	282	C20H42
6.	Heptadecane, 2,6-dimethyl- (9CI)	268	C19H40
7.	Heptane, 3-ethyl-5-methyl- (9CI)	142	C10H22

Sample file: >FC315 Spectrum #: 898
Search speed: 2 Tilting option: S No. of ion ranges searched: 53

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	97*	1921706	11242	"BIGDB	115	20	1	0	57	1	72		97	
2.	83	55045119	10998	"BIGDB	81	32	2	0	96	5	57		26	
3.	79	74645980	3988	"BIGDB	92	17	0	0	100	13	43		69	
4.	78	3891983	4036	"BIGDB	64	60	2	0	83	5	55		14	
5.	76	75163972	11258	"BIGDB	96	43	2	-1	77	8	45		22	
6.	76*	54105678	3959	"BIGDB	78	38	1	-1	74	15	40		52	
7.	75*	52896909	3958	"BIGDB	60	34	0	0	64	30	37		73	



Retention time = 20.72

Area = 210807.0 Tentative Concentration is 2500.00

1. Heptadecane (8CI9CI)	240	C17H36
2. Heptadecane, 2,6,10,15-tetramethyl- (9CI)	296	C21H44
3. Hexadecane, 7,9-dimethyl- (8CI9CI)	254	C18H38
4. Hexatriacontane (8CI9CI)	506	C36H74
5. Tritetracontane (8CI9CI)	604	C43H88
6. Nonadecane (8CI9CI)	268	C19H40
7. Tetradecane, 1-iodo- (8CI9CI)	324	C14H29I

UNIDENTIFIED ALKANE

Sample file: >FC315 Spectrum #: 972
Search speed: 2 Tilting option: S No. of ion ranges searched: 64

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	86	629787	6090	"BIGDB	98	23	2	2	91	2	60		33	
2.	83	54833486	6161	"BIGDB	101	32	2	2	70	5	57		28	
3.	83*	21164954	6224	"BIGDB	70	65	2	0	75	8	54		50	
4.	78	630068	6193	"BIGDB	70	92	2	0	78	2	55		16	
5.	78	7098217	6150	"BIGDB	69	99	2	0	72	2	55		15	
6.	78	629925	6091	"BIGDB	95	39	3	1	83	2	55		14	
7.	78	19218941	6199	"BIGDB	91	37	2	-1	77	5	55		18	

Peak # in PBM file	Retention Tim	Peak Area	10% of Nearest ISTD Area
1	3.41	524990	79618
2	10.08	391413	183318
3	10.26	261511	183318
4	10.77	267361	183318
5	11.21	499301	183318
6	11.78	296023	183318
7	11.96	322285	183318
8	12.29	536847	183318
9	12.80	999660	183318
10	13.67	303326	80890
11	14.04	196550	80890
12	14.15	403532	80890
13	14.55	1151980	80890
14	15.59	565484	80890
15	16.21	476579	80890
16	17.80	403976	80890
17	18.53	201221	80890
18	19.30	324251	41599
19	19.37	207356	41599
20	20.72	210807	41599

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
NSLB-4 COMP.
E4#2093

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/04/89
Date Analyzed: 6/13/89 15:19
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	220.	J
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	5800.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	5800.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	5800.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	5800.	U
100-02-7	4-Nitrophenol	5800.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	5800.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	5800.	U
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2300.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1200.	U
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB-4 Comp.

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Soil Lab Sample ID: EA#2093

Sample wt/vol: 10.18g (g/mL) ____ Lab File ID: DFC419

Level: (low/med) Low Date Received: 5/3/89

% Moisture: not dec. 14.8 dec. _____ Date Extracted: 5/4/89

Extraction: (SepF/Cont/Sonc) Cont Date Analyzed: 6/13/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: _____

Number TICs found: 1

CONCENTRATION UNITS: (~~ug/L or~~ ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	—	Unknown	28.88	1800	J
2.					
3.					
4.					
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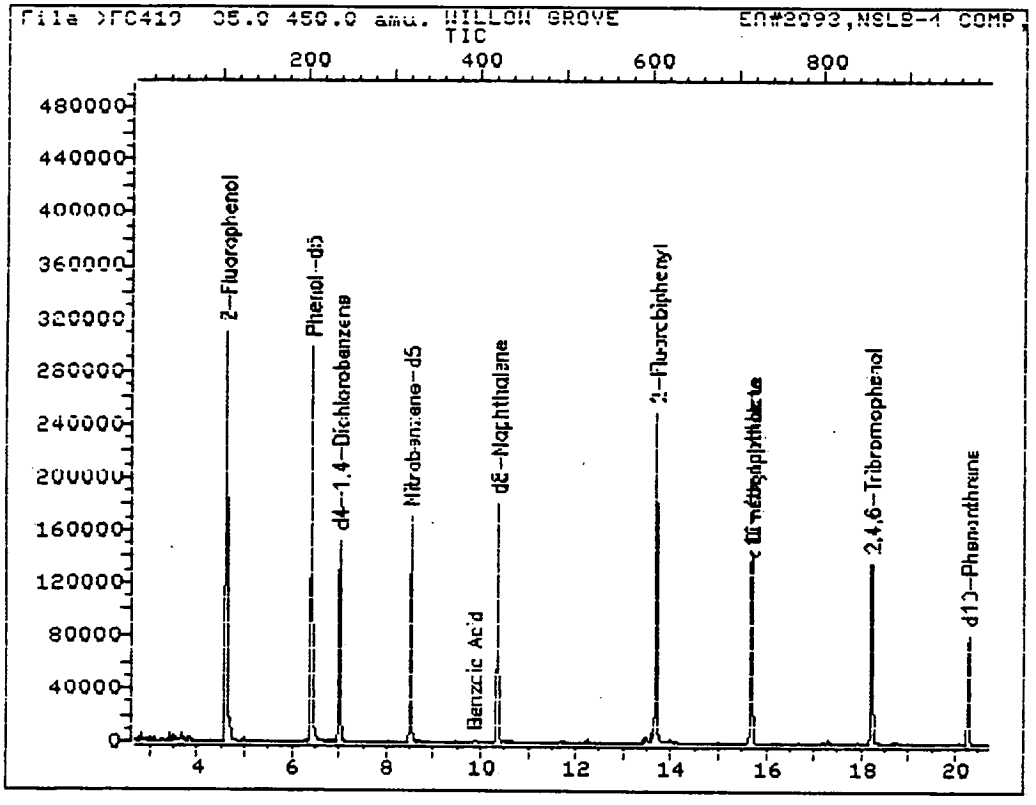
30.					

FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



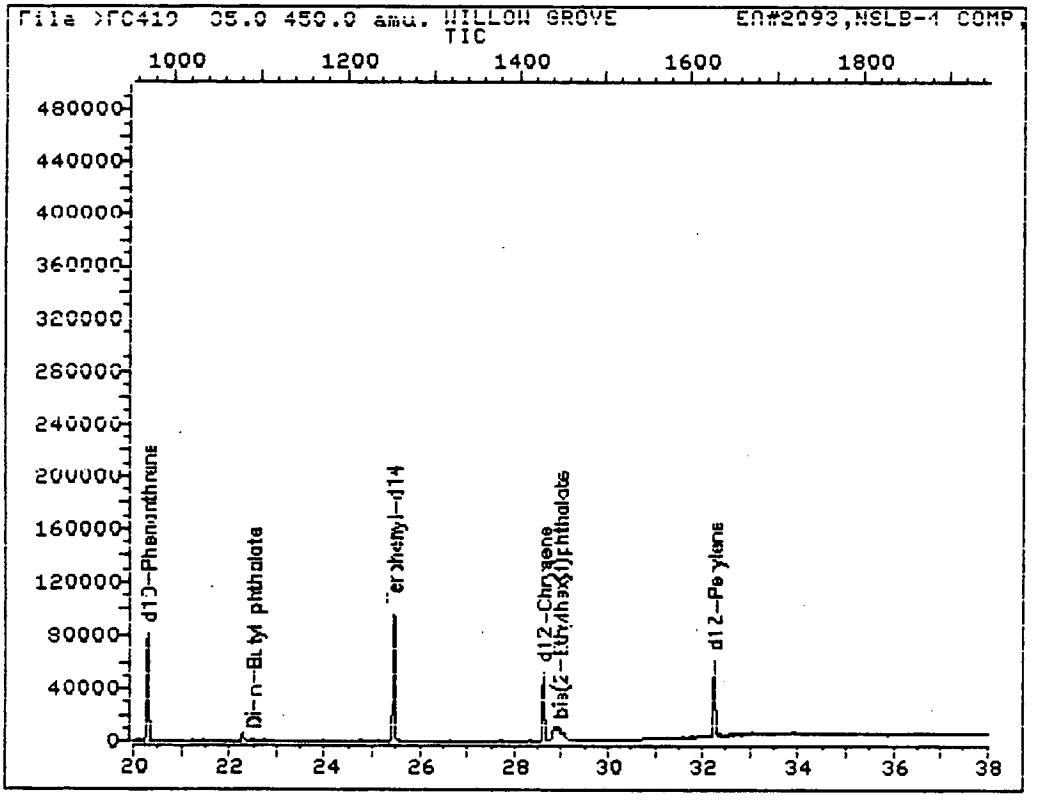
Data File: >FC419::D4 Quant Output File: ^FC419::QT
Name: WILLOW GROVE
Misc: EA#2093,NSLB-4 COMP,SOIL,10.18G,1, <98.23> BTL# 6

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 11:22

Operator ID: BHADRA
Quant Time: 890613 16:00
Injected at: 890613 15:19

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC419::D4 Quant Output File: ^FC419::QT
Name: WILLOW GROVE
Misc: EA#2093,NSLB-4 COMP,SOIL,10.18G,1, <98.23> BTL# 6

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 11:22

Operator ID: BHADRA
Quant Time: 890613 16:00
Injected at: 890613 15:19

TIC page 2 of 2

QUANT REPORT

Operator ID: BHADRA Quant Rev: 6 Quant Time: 890613 16:00
Output File: ^FC419::QT Injected at: 890613 15:19
Data File: >FC419::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2093,NSLB-4 COMP,SOIL,10.18G,1, <98.23> BTL# 6

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 11:22

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.02	152.0	59981	40.00	NG	96
2)	2-Fluorophenol	4.60	112.0	190956	100.84	NG 51%	92
3)	Phenol-d5	6.42	99.0	244726	117.27	NG 58%	96
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.35	136.0	204562	40.00	NG	88
17)	Nitrobenzene-d5	8.52	82.0	117424	63.35	NG 63%	90
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	9.86	122.0	1128	1.93	NG	90
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	15.69	164.0	82272	40.00	NG	95
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	13.69	172.0	203745	66.83	NG 67%	96
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	15.71	163.0	29390	~~8.53~~	NG	53
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

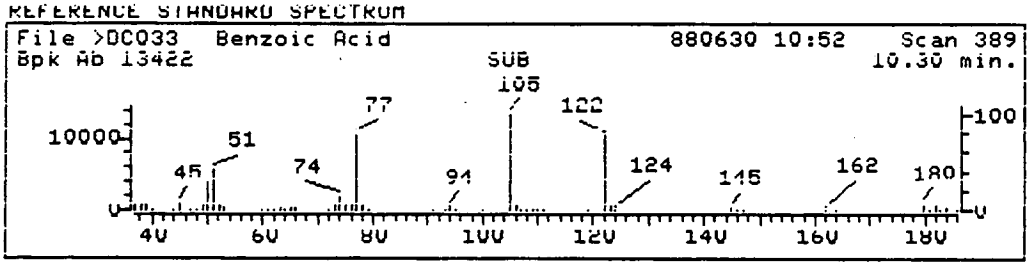
QUANT REPORT
page 2

Output File:^FC419:: Data File:>FC419::D4

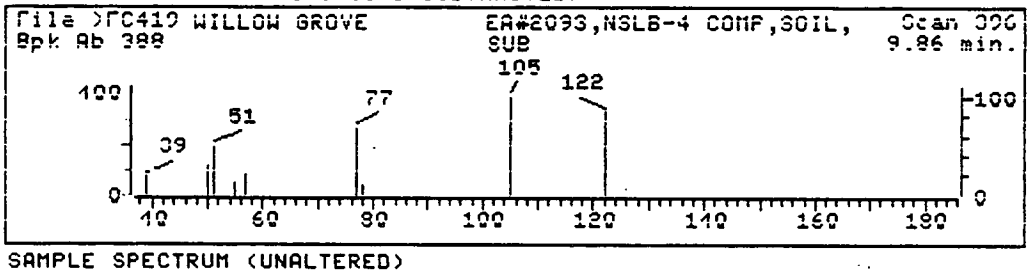
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.30	188.0	88888	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.21	329.9	69886	164.94	NG 82%	93
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	22.51	149.0	1414	~~.32~~	NG	99
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	28.62	240.0	50212	40.00	NG	97
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	25.45	244.0	120790	69.64	NG 70%	82
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	28.97	149.0	1501	~~.82~~	NG	97
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.25	264.0	61789	40.00	NG	93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

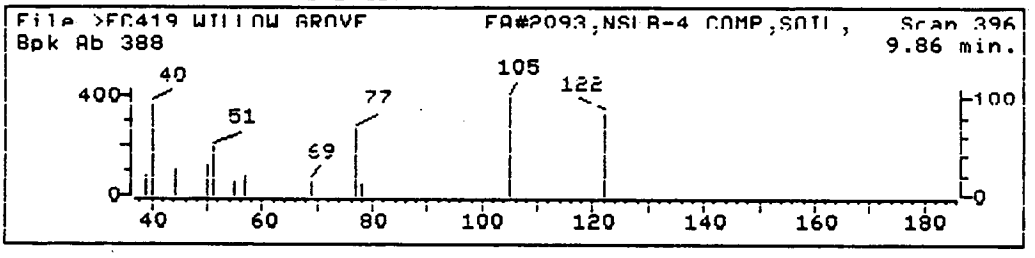
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

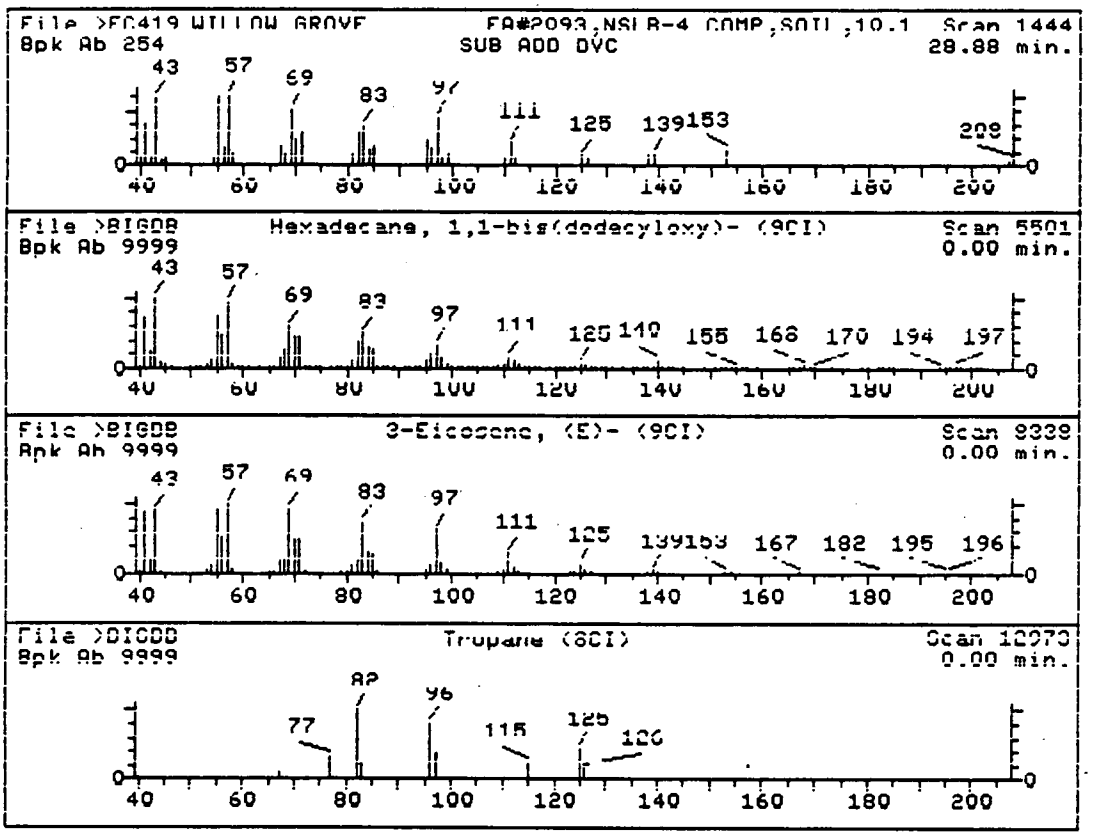


SAMPLE SPECTRUM (UNALTERED)



Data File: >FC419::D4 Quant Output File: ^FC419::QT
Nam : WILLOW GROVE
Misc: EA#2093,NSLB-4 COMP,SOIL,10.18G,1, <98.23> BTL# 6
Quant Time: 890613 16:00 Quant ID File: IDFCLP::BD
Injected at: 890613 15:19 Last Calibration: 890613 11:22

Compound No: 22
Compound Name: Benzoic Acid
Scan Number: 396
Retention Time: 9.86 min.
Quant Ion: 122.0
Area: 1128
Concentration: 1.93 NG
q-value: 90



Retention time = 28.88

Area = 53852.00 Tentative Concentration is 1800.00

1.	H xadecane, 1,1-bis(dodecyloxy)- (9CI)	594	C40H82O2
2.	3-Eicosene, (E)- (9CI)	280	C20H40
3.	Tropane (8CI)	125	C8H15N
4.	Cyclohexane, 1-(cyclohexylmethyl)-2-ethyl-, trans- (9CI)	208	C15H28
5.	1-Hentetracontanol (9CI)	592	C41H84O
6.	Cyclohexanamine, N-butylidene- (9CI)	153	C10H19N
7.	7-Oxabicyclo[4.1.0]heptane, 1-methyl- (8CI9CI)	112	C7H12O

Sample file: >FC419 Spectrum #: 1444
Search speed: 2 Tilting option: S No. of ion ranges searched: 67

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	25	56554644	'5501	"BIGDB	72	121	3	0	96	50	7			12

2.	20	74685339	8338	"BIGDB	93	73	3	0	77	51	5	19
3.	15*	529179	12973	"BIGDB	25	38	2	0	31	59	3	14
4.	15*	54934928	10742	"BIGDB	46	94	3	0	97	59	3	13
5.	15	40710427	8384	"BIGDB	70	125	2	0	70	56	3	16
6.	15*	1197520	13008	"BIGDB	31	94	3	0	115	60	3	13
7.	12*	1713333	8263	"BIGDB	41	64	0	-1	63	62	2	26

LIBRARY SEARCH SUMMARY

MS Data File:>FC419::D4 Analyst:BHADRA MS

Name:WILLOW GROVE Date/Time: 6/13/89 15:19
Misc:EA#2093,NSLB-4 COMP,SOIL,10.18G,1, ?98.23? BTL# 6

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	28.88	53852	13803

>FC419 WILLOW GROVE EA#2093,NSLB-4 COMP,SOIL,10.18G,1,
35.01 450.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 13 Bunching: -1
Dnslope: 0.00 Results File IFC419 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	4.60	99	106	123	308639	773454	757664	92.71	14.588
2	6.42	201	206	216	297923	828475	817280	100.00	15.736
3	7.02	234	239	249	151693	384192	373735	45.73	7.196
4	8.52	316	322	330	170996	414328	406976	49.80	7.836
5	10.35	417	423	429	179671	437477	430739	52.70	8.294
6	13.69	598	607	619	247571	664274	633824	77.55	12.204
7	15.71	701	718	726	143481	423046	410959	50.28	7.913
8	18.21	851	856	874	135894	426598	416400	50.95	8.017
9	20.30	964	971	977	81470	234619	227439	27.83	4.379
10	25.45	1248	1255	1272	96086	293476	280509	34.32	5.401
11	28.62	1425	1430	1436	52001	147951	138025	16.89	2.658
12	28.89	1436	1445	1463	9924	178502	144529	17.68	2.783
13	32.25	1625	1630	1637	57325	217360	155572	19.04	2.995

Sum of corrected areas: 5193651.

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
NSLB-5 COMP.
EA-2095

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/04/89
Date Analyzed: 6/13/89 16:11
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	220.	J
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	5900.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	5900.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	5900.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	5900.	U
100-02-7	4-Nitrophenol	5900.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	5900.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	5900.	U
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2400.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	120.	J
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB-5 COMP.

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: _____ Case No.: WILLOW GR. SAS No.: _____ SDG No.: _____

Matrix: (soil/~~water~~) SOIL Lab Sample ID: EA#2095

Sample wt/vol: 10.45 (g/~~mL~~) ____ Lab File ID: >FC420

Level: (low/med) LOW Date Received: 5/3/89

% Moisture: not dec. 19.3 dec. _____ Date Extracted: 5/4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 6/13/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: _____

Number TICs found: 3

CONCENTRATION UNITS: (ug/L or ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	625310	4-Penten-2-ol	3.60	570 J	
2.	57103	Hexadecanoic Acid	22.28	650 J	
3.	—	Unknown	28.85	2600 J	
4.					
5.					
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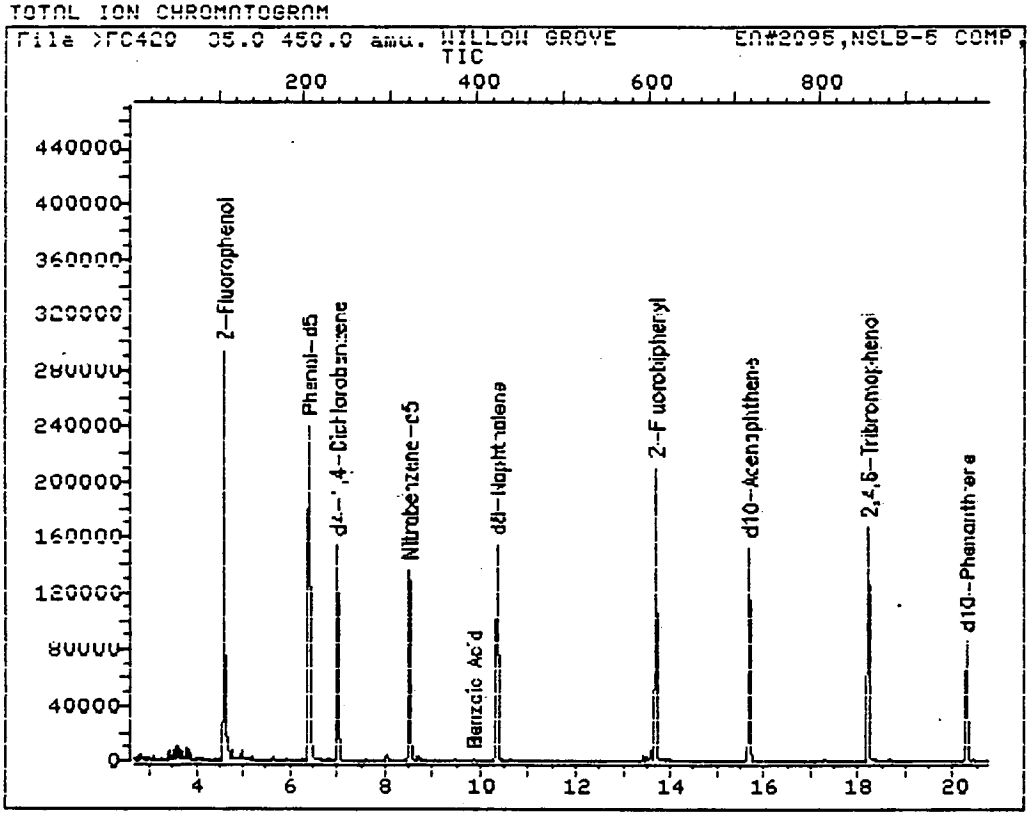
30.					

FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



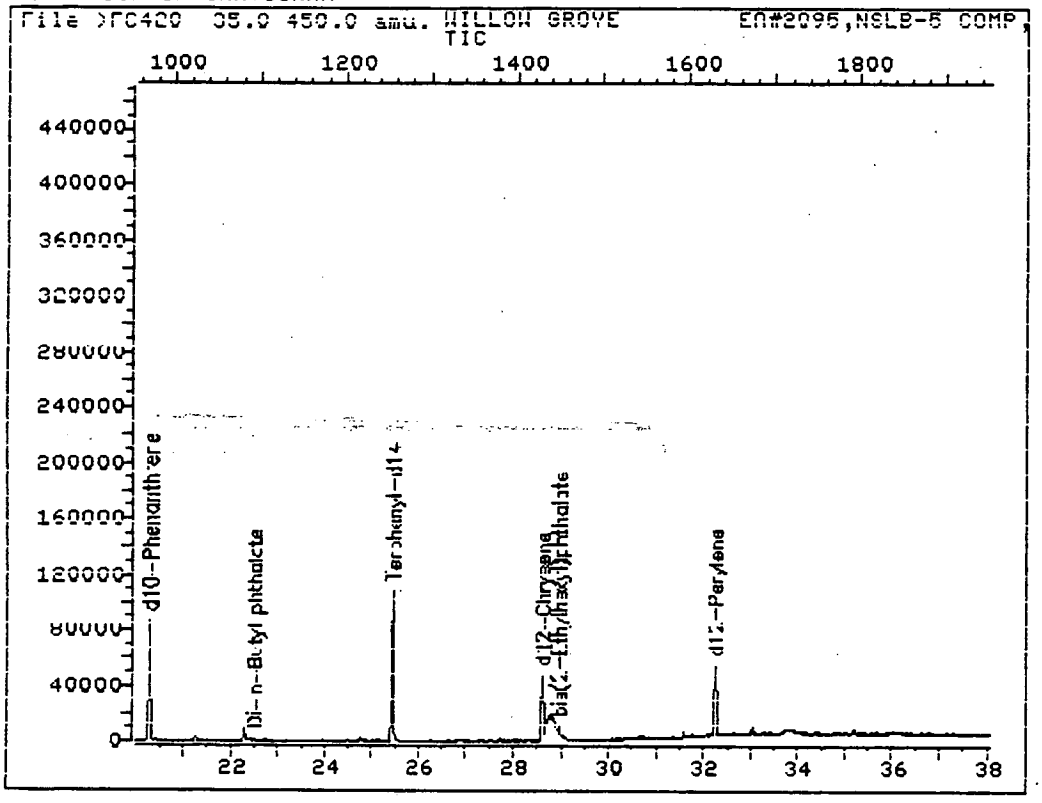
Data File: >FC420::D4 Quant Output File: ^FC420::QT
Name: WILLOW GROVE
Misc: EA#2095,NSLB-5 COMP,SOIL,10.45G,1, (95.69) BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 11:22

Operator ID: BHADRA
Quant Time: 890613 16:52
Injected at: 890613 16:11

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC420::D4 Quant Output File: ^FC420::QT
Nam : WILLOW GROVE
Misc: EA#2095,NSLB-5 COMP,SOIL,10.45G,1, (95.69) BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 11:22

Operator ID: BHADRA
Quant Time: 890613 16:52
Injected at: 890613 16:11

TIC page 2 of 2

QUANT REPORT

Operator ID: BHADRA Quant Rev: 6 Quant Time: 890613 16:52
Output File: ^FC420::QT Injected at: 890613 16:11
Data File: >FC420::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2095,NSLB-5 COMP,SOIL,10.45G,1, <95.69> BTL# 7

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 11:22

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.01	152.0	56133	40.00	NG	94
2)	2-Fluorophenol	4.59	112.0	149467	84.34	NG 42%	90
3)	Phenol-d5	6.41	99.0	202195	103.53	NG 52%	99
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.34	136.0	188740	40.00	NG	88
17)	Nitrobenzene-d5	8.51	82.0	101153	59.15	NG 59%	91
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	9.85	122.0	1014	1.88	NG ✓	90
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	15.70	164.0	79961	40.00	NG	95
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	13.68	172.0	191907	64.76	NG 65%	96
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	0.00	163.0	0	0.00	NG	
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

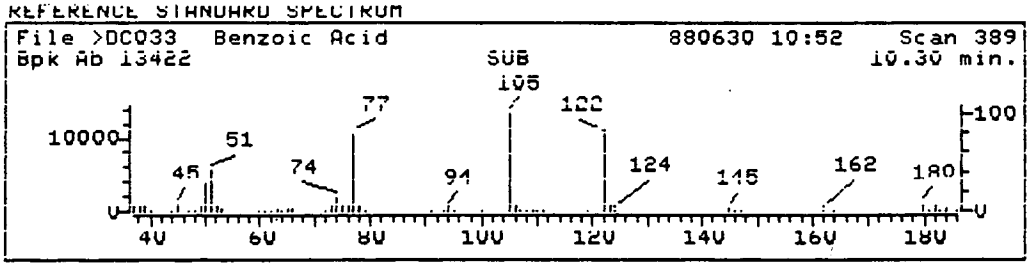
QUANT REPORT
page 2

Output File:^FC420:: Data File:>FC420::D4

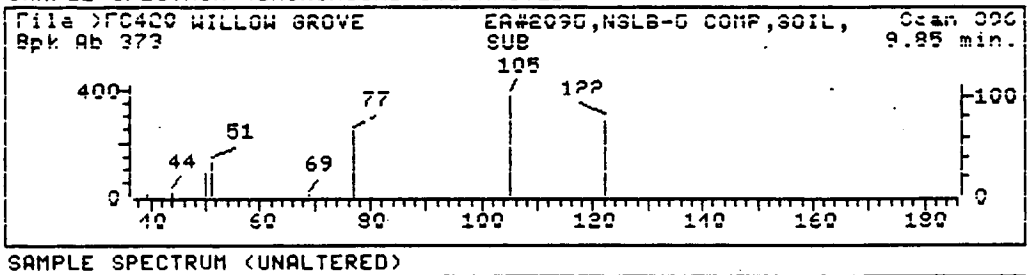
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.28	188.0	87137	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.22	329.9	72335	174.15	NG 87%	94
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	22.50	149.0	1356	~~31~~	NG	91
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	28.61	240.0	48425	40.00	NG	95
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	25.45	244.0	124023	74.14	NG 74%	93
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	28.96	149.0	1812	1.03	NG ✓	89
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.24	264.0	57938	40.00	NG	93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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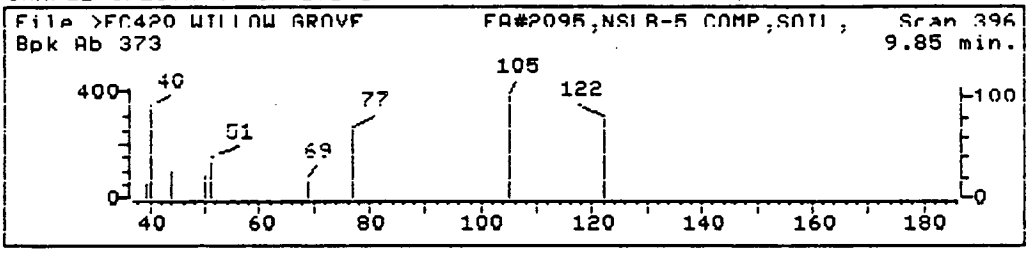
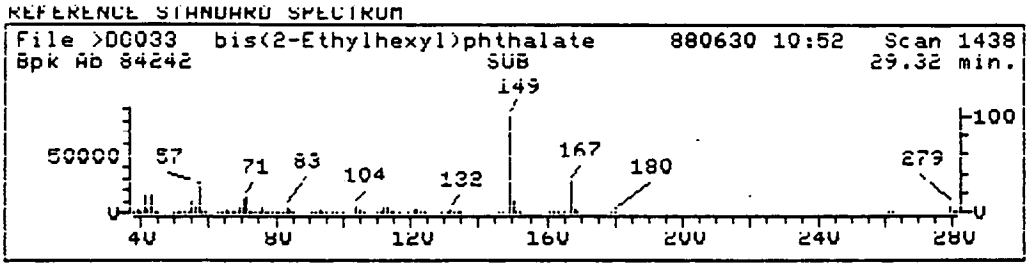


Data File: >FC420::D4 Quant Output File: ^FC420::QT
Name: WILLOW GROVE
Misc: EA#2095,NSLB-5 COMP,SOIL,10.45G,1, (95.69) BTL# 7
Quant Time: 890613 16:52 Quant ID File: IDFCLP::BD
Injected at: 890613 16:11 Last Calibration: 890613 11:22

Compound No: 22
Compound Name: Benzoic Acid
Scan Number: 396
Retention Time: 9.85 min.
Quant Ion: 122.0
Area: 1014
Concentration: 1.88 NG
q-value: 90

REFERENCE STANDARD SPECTRUM



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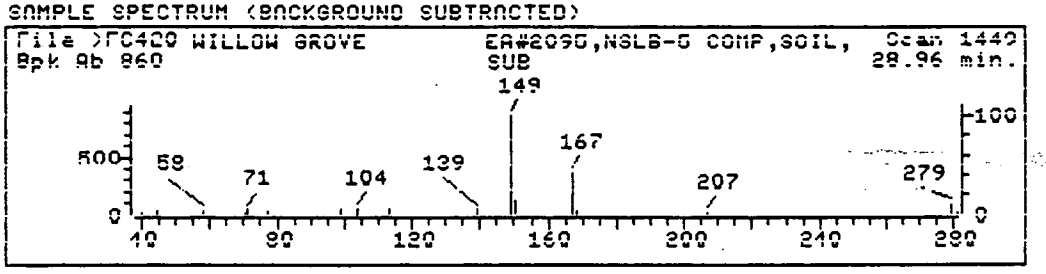

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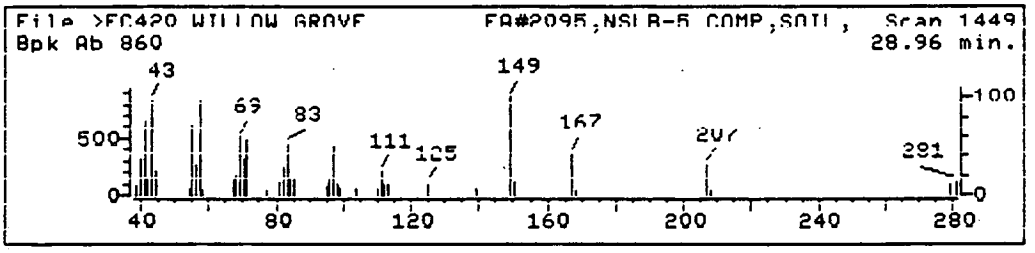
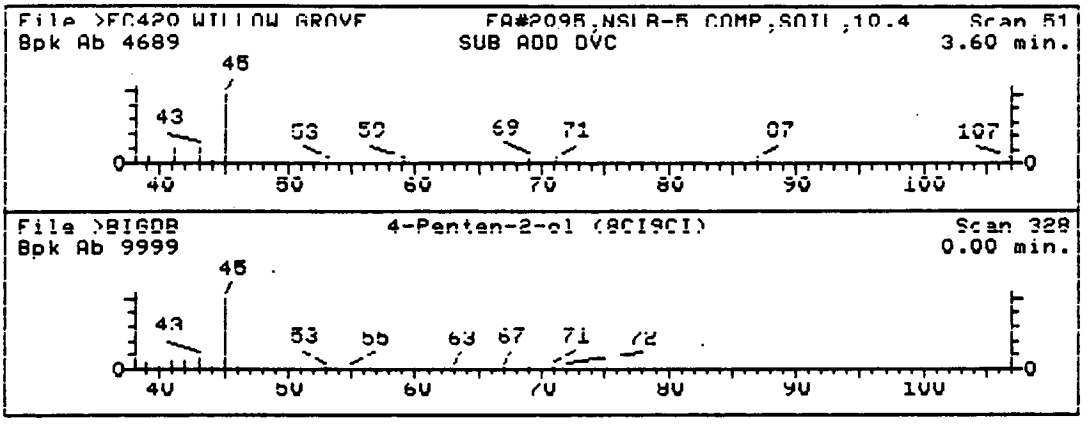


Data File: >FC420::D4 Quant Output File: ^FC420::QT
Name: WILLOW GROVE
Misc: EA#2095,NSLB-5 COMP,SOIL,10.45G,1, (95.69) BTL# 7
Quant Time: 890613 16:52 Quant ID File: IDFCLP::BD
Injected at: 890613 16:11 Last Calibration: 890613 11:22

Compound No: 68
Compound Name: bis(2-Ethylhexyl)phthalate
Scan Number: 1449
Retention Time: 28.96 min.
Quant Ion: 149.0
Area: 1812
Concentration: 1.03 NG
q-value: 89



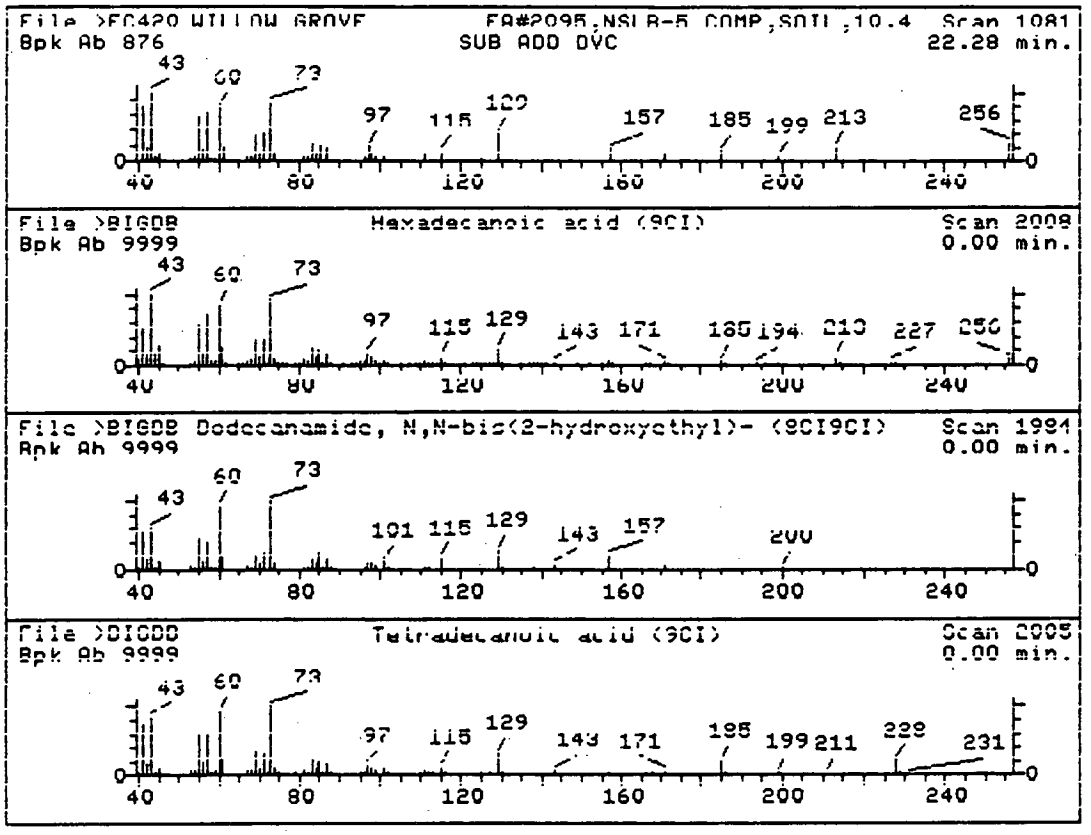
Retention time = 3.60

Area = 37263.00 Tentative Concentration is 510.00

1. 4-Penten-2-ol (8CI9CI) 86 C5H10O

Sample file: >FC420 Spectrum #: 51
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	52	625310	328	"BIGDB	33	40	1	0	100	20	20			12



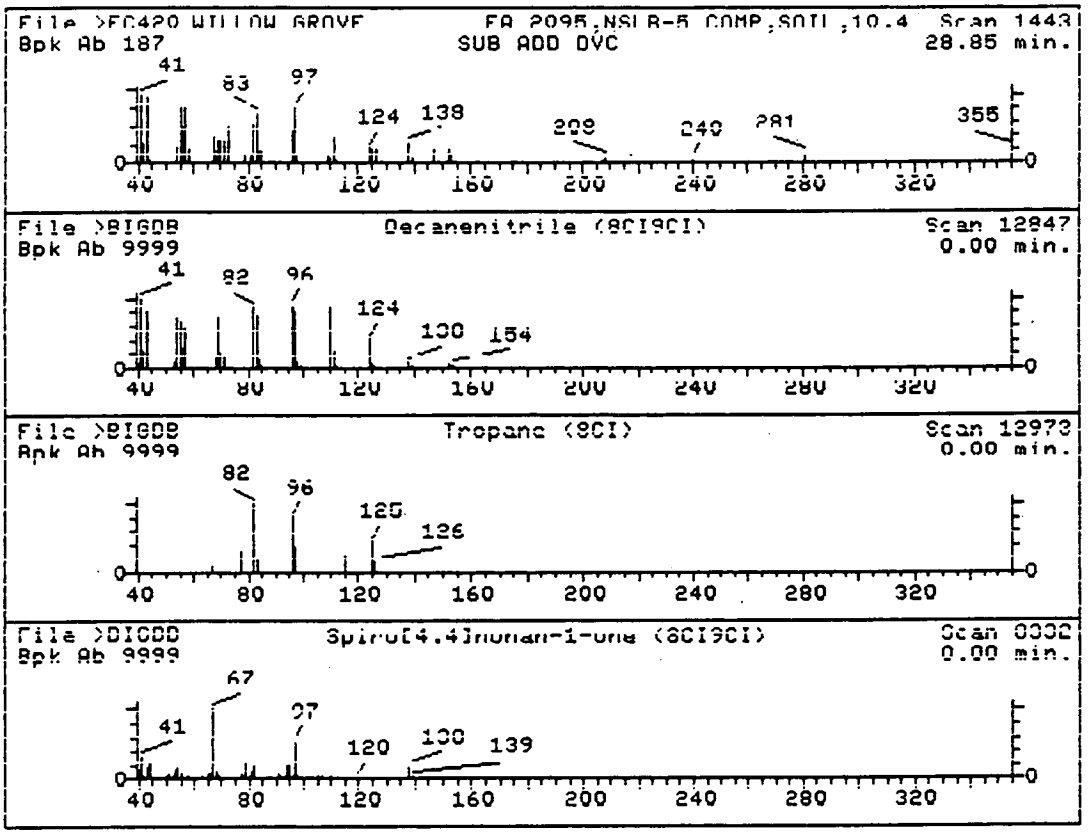
R tention time = 22.28

Area = 30390.00 Tentative Concentration is 650.00

1.	Hexadecanoic acid (9CI)	256	C16H32O2
2.	Dodecanamide, N,N-bis(2-hydroxyethyl)- (8CI9CI)	287	C16H33NO3
3.	Tetradecanoic acid (9CI)	228	C14H28O2
4.	1,3,4-Thiadiazol-2-amine, 5-ethyl- (9CI)	129	C4H7N3S
5.	Glycine, N-methyl-N-(1-oxododecyl)- (9CI)	271	C15H29NO3
6.	Isoxazolidine, 5-ethyl-2,4-dimethyl-, trans- (9CI)	129	C7H15NO
7.	Isoxazolidine, 5-ethyl-2,4-dimethyl-, cis- (9CI)	129	C7H15NO

Sample file: >FC420 Spectrum #: 1081
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	54*	57103	2008	"BIGDB	73	78	3	0	90	34	20	38
2.	47	120401	1984	"BIGDB	86	67	1	0	74	41	16	42
3.	26	544638	2005	"BIGDB	71	75	3	0	84	36	10	12
4.	25*	14068532	1934	"BIGDB	26	98	3	0	74	47	7	13
5.	20	97789	1972	"BIGDB	56	94	1	0	84	51	5	14
6.	15*	56728144	1932	"BIGDB	37	67	2	0	78	60	3	14
7.	15*	56701021	1930	"BIGDB	28	67	3	0	167	60	3	13



Ret ntion time = 28.85

Area = 75756.00 Tentative Concentration is 2600.00

Unknown

1. Decanenitrile (8CI9CI)	153	C10H19N
2. Tropane (8CI)	125	C8H15N
3. Spiro[4.4]nonan-1-one (8CI9CI)	138	C9H14O
4. Cyclohexane, butylidene- (8CI9CI)	138	C10H18
5. 1H-Pyrazole, 4,5-dihydro-3-methyl-1-propyl- (9CI)	126	C7H14N2
6. Furan, 2,3-dihydro-4-(1-methylpropyl)-, (S)- (9CI)	126	C8H14O
7. Cyclohexane, 1-ethyl-4-methyl-, trans- (8CI9CI)	126	C9H18

Sample file: >FC420 Spectrum #: 1443
S arch speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	20*	1975786	12847	"BIGDB	28	100	2	0	51	51	5		14	
2.	15*	529179	12973	"BIGDB	25	38	2	0	43	60	3		14	
3.	15*	14727583	8332	"BIGDB	29	81	3	0	148	58	3		13	
4.	11*	2272039	15328	"BIGDB	44	64	3	0	116	64	2		13	
5.	11*	26964498	8316	"BIGDB	30	57	1	0	79	63	2		16	
6.	11*	34379549	8317	"BIGDB	27	61	2	0	79	64	2		14	
7.	11*	6236880	8307	"BIGDB	25	71	2	0	80	62	2		14	

LIBRARY SEARCH SUMMARY

MS Data File:>FC420::D4 Analyst:BHADRA MS

Name:WILLOW GROVE Date/Time: 6/13/89 16:11
Misc:EA#2095,NSLB-5 COMP,SOIL,10.45G,1, ?95.69? BTL# 7

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	3.60	37263	34991
2	22.28	30390	22129
3	28.85	75756	13635

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
NSLB-6 COMP.
EA# 2097

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/04/89
Date Analyzed: 6/13/89 23:46
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	320.	J
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	5900.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	5900.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	5900.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	5900.	U
100-02-7	4-Nitrophenol	5900.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	5900.	U
86-30-6	N-Nitrosodiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	5900.	U
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2400.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1200.	U
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

NSLB-6 Comp

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: _____ Case No.: Willow Gr. SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Soil Lab Sample ID: EA#2097

Sample wt/vol: 10.32 (g/mL) ____ Lab File ID: XFC 428

Level: (low/med) Low Date Received: 5/3/89

% Moisture: not dec. 17.6 dec. _____ Date Extracted: 5/4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 6/16/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: _____

Number TICs found: 1

CONCENTRATION UNITS: (ug/L or ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	—	Unknown	28.91	4200 J	
2.					
3.					
4.					
5.					
6.					
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9.					
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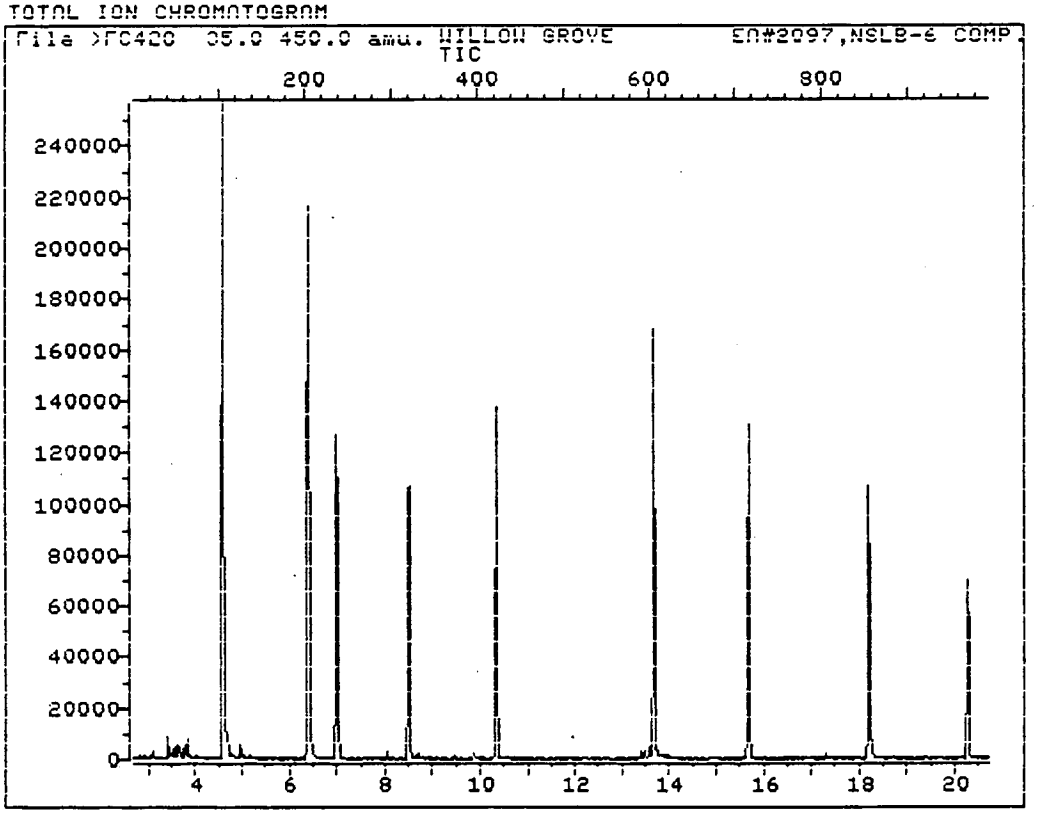
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



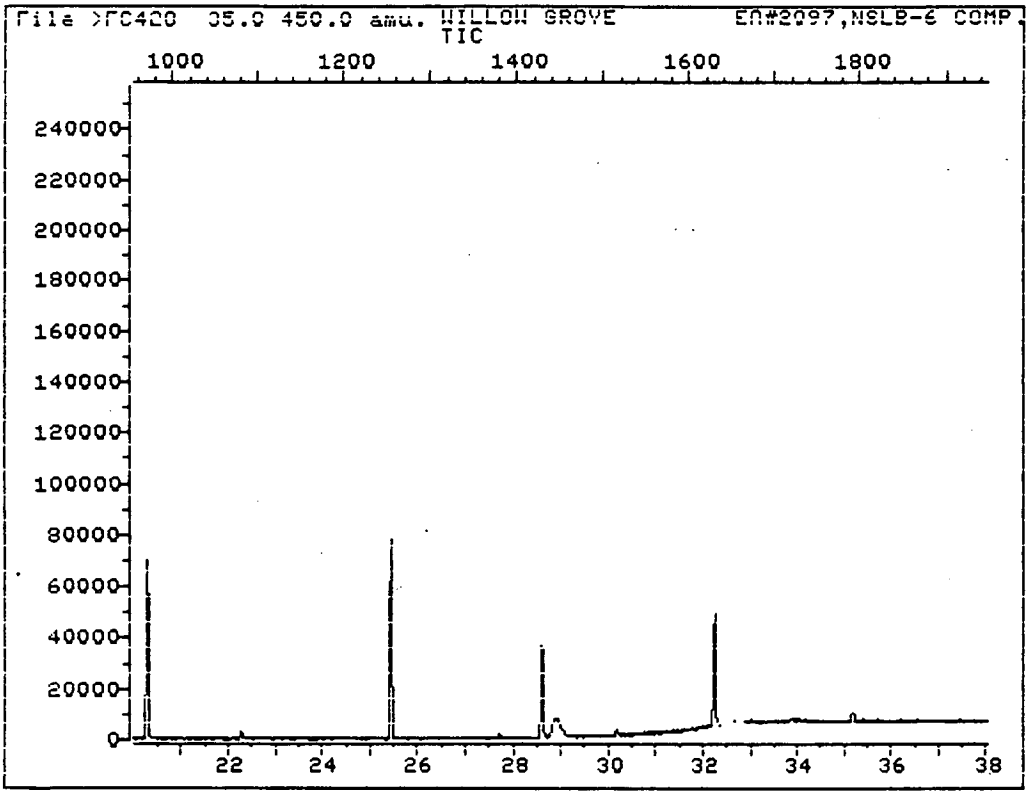
Data File: >FC428::D5 Quant Output File: ^FC428::QT
Name: WILLOW GROVE
Misc: EA#2097,NSLB-6 COMP.,SOIL,10.32g,1mL BTL# 1

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 23:59

Operator ID: BILL
Quant Time: 890614 00:27
Injected at: 890613 23:46

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC428::D5 Quant Output File: ^FC428::QT
Name: WILLOW GROVE
Misc: EA#2097,NSLB-6 COMP.,SOIL,10.32g,1mL BTL# 1

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 23:59

Op rator ID: BILL
Quant Time: 890614 00:27
Injected at: 890613 23:46

TIC page 2 of 2

QUANT REPORT

Operator ID: BILL Quant Rev: 6 Quant Time: 890614 00:27
Output File: ^FC428::QT Injected at: 890613 23:46
Data File: >FC428::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2097,NSLB-6 COMP.,SOIL,10.32g,1mL BTL# 1

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 23:59

	Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*d4-1,4-Dichlorobenzene	7.00	152.0	47865 ✓	40.00	NG		96
2)	2-Fluorophenol	4.59	112.0	134788	86.14	NG	43%	84
3)	Phenol-d5	6.40	99.0	170300	106.84	NG	53%	93
4)	Phenol	0.00	94.0	0	0.00	NG		
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG		
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG		
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG		
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG		
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG		
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG		
11)	2-Methylphenol	0.00	108.0	0	0.00	NG		
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG		
13)	4-Methylphenol	0.00	108.0	0	0.00	NG		
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG		
15)	Hexachloroethane	0.00	117.0	0	0.00	NG		
16)	*d8-Naphthalene	10.36	136.0	164930 ✓	40.00	NG		89
17)	Nitrobenzene-d5	8.51	82.0	84715	59.38	NG	59%	91
18)	Nitrobenzene	0.00	77.0	0	0.00	NG		
19)	Isophorone	0.00	82.0	0	0.00	NG		
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG		
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG		
22)	Benzoic Acid	9.87	122.0	1143	2.75	NG	✓	93
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG		
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG		
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG		
26)	Naphthalene	0.00	128.0	0	0.00	NG		
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG		
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG		
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG		
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG		
31)	*d10-Acenaphthene	15.69	164.0	66319 ✓	40.00	NG		95
32)	H xachlorocyclopentadiene	0.00	237.0	0	0.00	NG		
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG		
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG		
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG		
36)	2-Fluorobiphenyl	13.68	172.0	149487	64.46	NG	64%	96
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG		
38)	Dimethylphthalate	15.69	163.0	23176	~~9.14~~	~~NG~~		53
39)	Acenaphthylene	0.00	152.0	0	0.00	NG		
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG		
41)	Acenaphthene	0.00	153.0	0	0.00	NG		
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG		

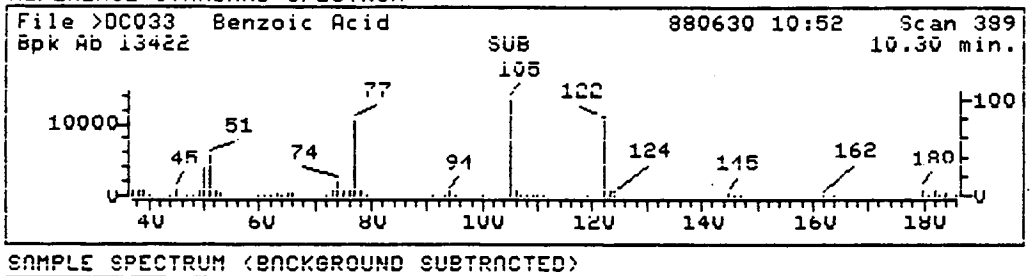
QUANT REPORT
page 2

Output File:^FC428:: Data File:>FC428::D5

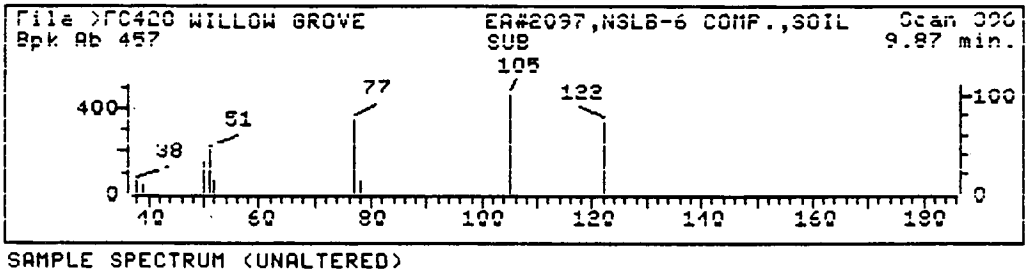
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.28	188.0	67527 ✓	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.21	329.9	44605	130.76	NG 65%	96
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Ph nanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	28.60	240.0	39172 49%	40.00	NG	94
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	25.45	244.0	82114	82.77	NG 83%	85
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	0.00	149.0	0	0.00	NG	
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.25	264.0	50214 ✓	40.00	NG	93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dib nzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

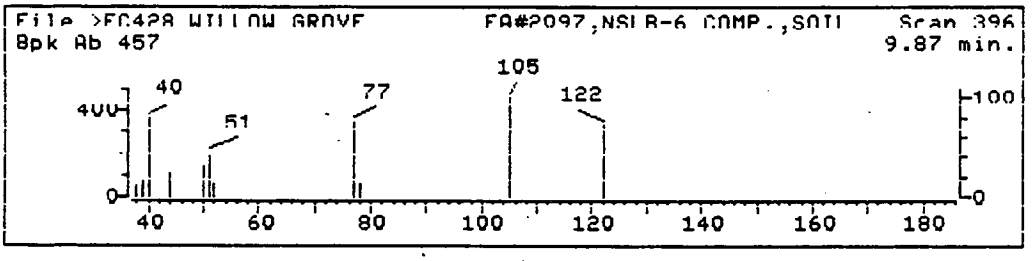
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

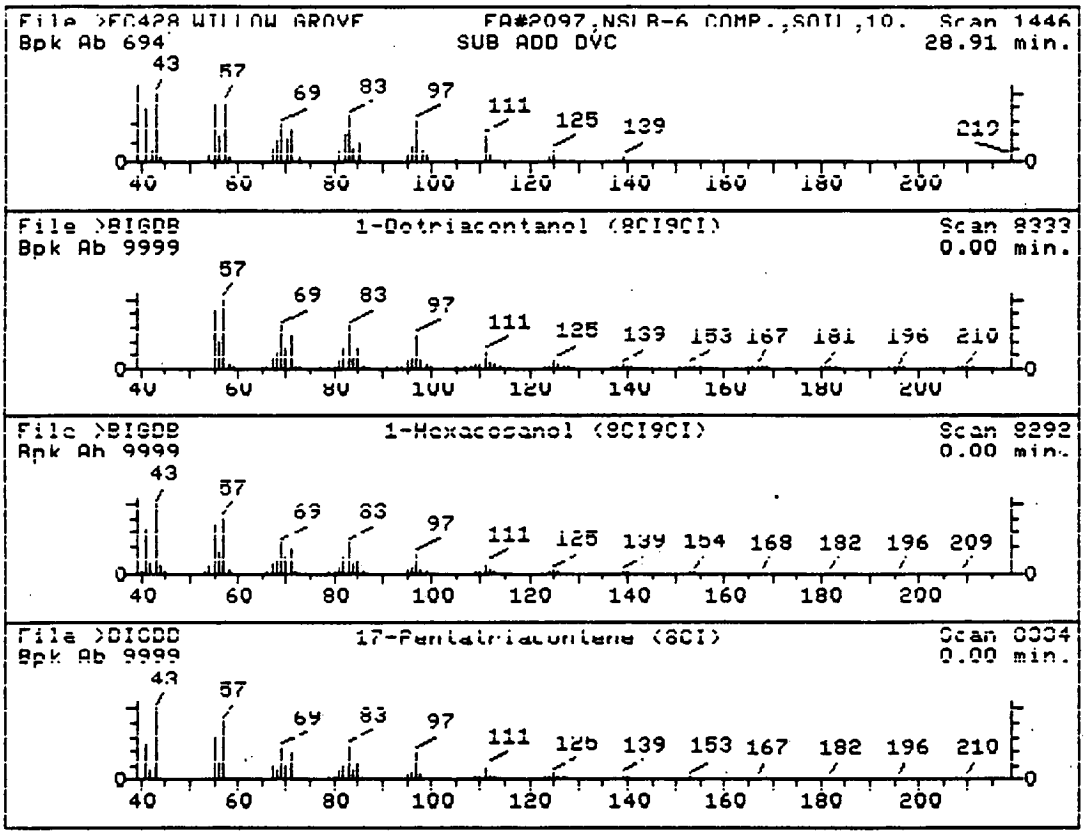


SAMPLE SPECTRUM (UNALTERED)



Data File: >FC428::D5 Quant Output File: ^FC428::QT
Name: WILLOW GROVE
Misc: EA#2097,NSLB-6 COMP.,SOIL,10.32g,1mL BTL# 1
Quant Time: 890614 00:27 Quant ID File: IDFCLP::BD
Injected at: 890613 23:46 Last Calibration: 890613 23:59

Compound No: 22
Compound Name: Benzoic Acid
Scan Number: 396
Retention Time: 9.87 min.
Quant Ion: 122.0
Area: 1143
Concentration: 2.75 NG
q-value: 93



Retention time = 28.91

Area = 97700.00 Tentative Concentration is 4200.00

1.	1-Dotriacontanol (8CI9CI)	466	C32H66O
2.	1-Hexacosanol (8CI9CI)	382	C26H54O
3.	17-Pentatriacontene (8CI)	490	C35H70
4.	1-Tetracosanol (8CI9CI)	354	C24H50O
5.	3-Eicosene, (E)- (9CI)	280	C20H40
6.	1-H ntetracontanol (9CI)	592	C41H84O
7.	11-Tricosene (9CI)	322	C23H46

UNKNOWN

Sample file: >FC428 Spectrum #: 1446
Search speed: 2 Tilting option: S No. of ion ranges searched: 60

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	88	6624799	8333	"BIGDB	135	46	2	-2	75	2	65		59	
2.	84	506525	8292	"BIGDB	137	26	2	-3	91	6	55		60	

3.	84	6971400	8334	"BIGDB	121	50	1	-2	97	10	55	61
4.	83	506514	8291	"BIGDB	130	34	2	-2	94	6	54	54
5.	76	74685339	8338	"BIGDB	111	55	3	-2	66	6	45	22
6.	58	40710427	8384	"BIGDB	81	114	2	0	78	18	25	22
7.	50	52078565	8318	"BIGDB	96	56	2	-2	82	22	22	22

LIBRARY SEARCH SUMMARY

MS Data File:>FC428::D4 Analyst:BILL MS

Name:WILLOW GROVE Date/Time: 6/13/89 23:46
Misc:EA#2097,NSLB-6 COMP.,SOIL,10.32g,1mL BTL# 1

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	28.91	97700	10933

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
DUP 9SL#1
EA # 2104

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/04/89
Date Analyzed: 6/14/89 3:19
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	380.	J
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	6000.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	6000.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	6000.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	6000.	U
100-02-7	4-Nitrophenol	6000.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	6000.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	6000.	U
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2400.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	160.	J
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

DUP 9SL#1

Lab Name: EA LABORATORIES Contract: 10388-03

Lab Code: _____ Case No.: WILLOW GR. SAS No.: _____ SDG No.: _____

Matrix: (soil/water) SOIL Lab Sample ID: EA# 2104

Sample wt/vol: 10.08 (g/mL) g Lab File ID: >FC 432

Level: (low/med) Low Date Received: 5/3/89

% Moisture: not dec. 17.5 dec. _____ Date Extracted: 5/4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 6/14/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: _____

Number TICs found: _____

CONCENTRATION UNITS: (~~ug/L or~~ ug/Kg) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	57103	Hexadecanoic Acid	22.28	600 J	
2.	—	Unknown	28.80	1600 J	
3.	—	Unknown	30.57	610 J	
4.	—	Unknown	33.70	1300 J	
5.	—	Unknown	35.19	880 J	
6.					
7.					
8.					
9.					
10.					
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15.					
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23.					
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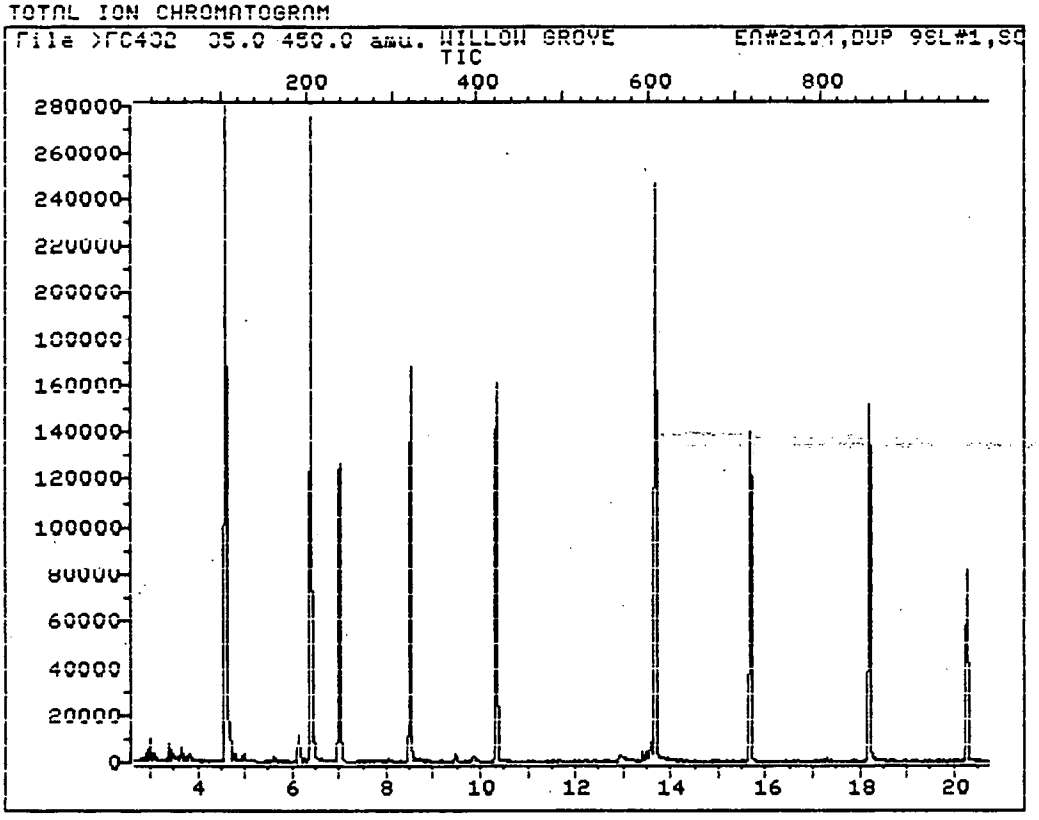
25.					
26.					
27.					
28.					
29.					
30.					

FORM I SV-TIC

TOTAL ION CHROMATOGRAM



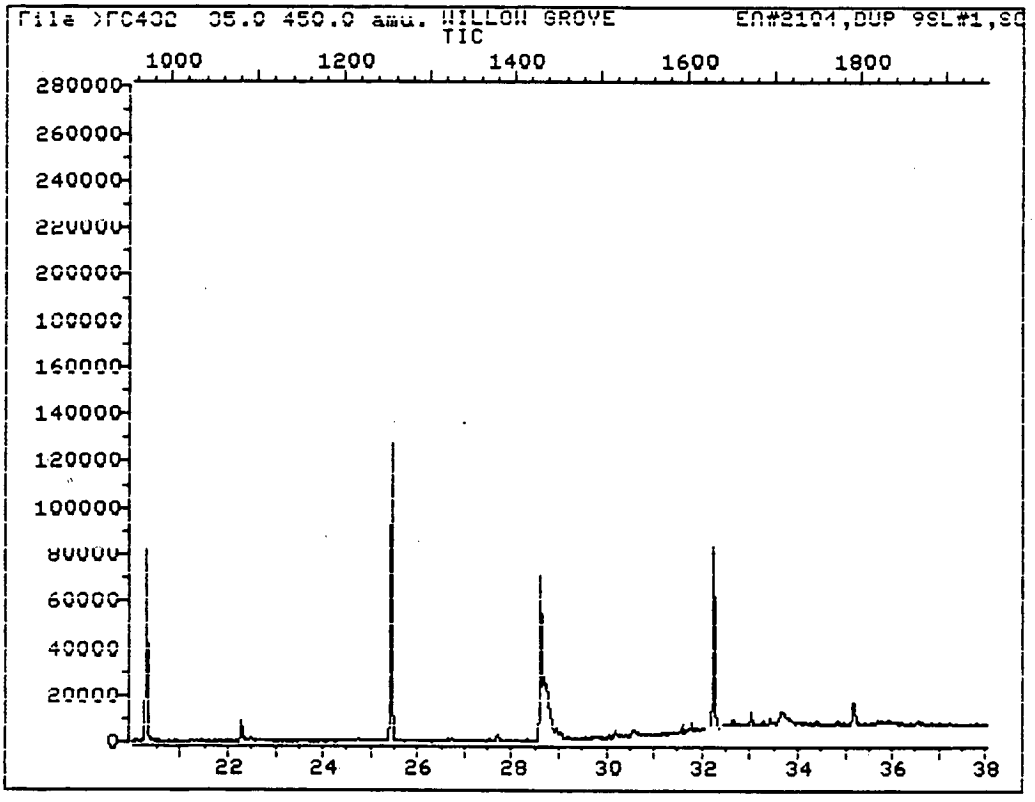
Data File: >FC432::D5 Quant Output File: ^FC432::QT
Name: WILLOW GROVE
Misc: EA#2104,DUP 9SL#1,SOIL,10.08g,1mL BTL# 5

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 23:59

Op rator ID: UNCLE
Quant Time: 890614 04:00
Injected at: 890614 03:19

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC432::D5 Quant Output File: ^FC432::QT
Name: WILLOW GROVE
Misc: EA#2104,DUP 9SL#1,SOIL,10.08g,1mL BTL# 5

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 23:59

Operator ID: UNCLE
Quant Time: 890614 04:00
Injected at: 890614 03:19

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890614 04:00
Output File: ^FC432::QT Injected at: 890614 03:19
Data File: >FC432::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2104,DUP 9SL#1,SOIL,10.08g,1mL BTL# 5

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 23:59

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	6.99	152.0	52636✓	40.00	NG	95
2)	2-Fluorophenol	4.60	112.0	165938	96.43	NG 48%	93
3)	Phenol-d5	6.41	99.0	216903	123.74	NG 62%	99
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.35	136.0	184407✓	40.00	NG	89
17)	Nitrobenzene-d5	8.52	82.0	113797	71.34	NG 71%	92
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	9.86	122.0	1484	3.19	NG✓	92
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	15.68	164.0	75768✓	40.00	NG	94
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	13.68	172.0	201089	75.90	NG 76%	97
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dim thylphthalate	15.68	163.0	26631	~~9.20~~	~~NG~~	53
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

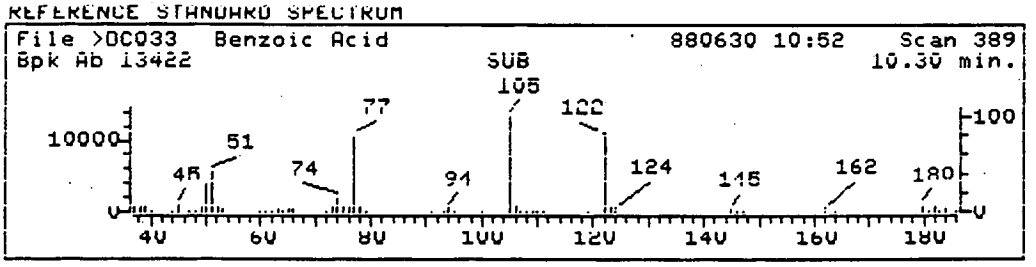
QUANT REPORT
page 2

Output File:^FC432:: Data File:>FC432::D5

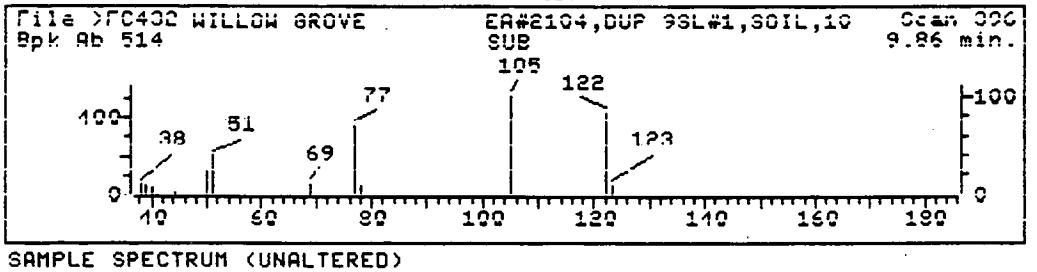
	Compound	R.T.	Q ion	Area	Conc	Units		q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG		
44)	Dibenzofuran	0.00	168.0	0	0.00	NG		
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG		
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG		
47)	Diethylphthalate	0.00	149.0	0	0.00	NG		
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG		
49)	Fluorene	0.00	166.0	0	0.00	NG		
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG		
51)	*d10-Phenanthrene	20.27	188.0	86759 ✓	40.00	NG		99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG		
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG		
54)	2,4,6-Tribromophenol	18.20	329.9	67892	154.91	NG	77%	97
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG		
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG		
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG		
58)	Phenanthrene	0.00	178.0	0	0.00	NG		
59)	Anthracene	0.00	178.0	0	0.00	NG		
60)	Di-n-Butyl phthalate	22.48	149.0	1738	~~45 NG~~			95
61)	Fluoranthene	0.00	202.0	0	0.00	NG		
62)	*d12-Chrysene	28.61	240.0	61588 ✓	40.00	NG		98
63)	Pyrene	0.00	202.0	0	0.00	NG		
64)	Terphenyl-d14	25.44	244.0	145234	93.11	NG	93%	82
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG		
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG		
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG		
68)	bis(2-Ethylhexyl)phthalate	28.94	149.0	1915	1.30	NG	✓	94
69)	Chrysene	0.00	228.0	0	0.00	NG		
70)	*d12-Perylene	32.25	264.0	80560 ✓	40.00	NG		93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG		
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG		
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG		
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG		
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG		
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG		
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG		

* Compound is ISTD

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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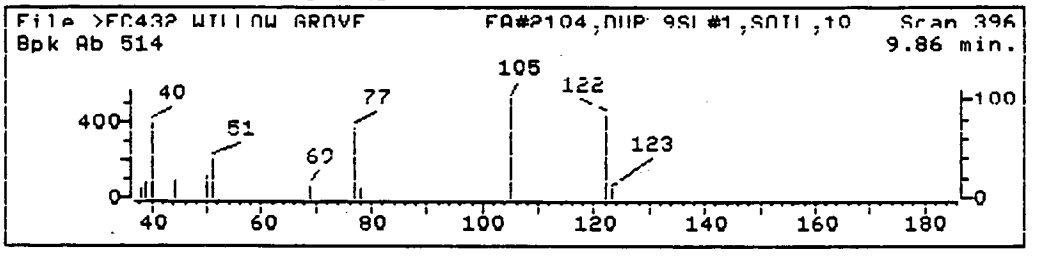
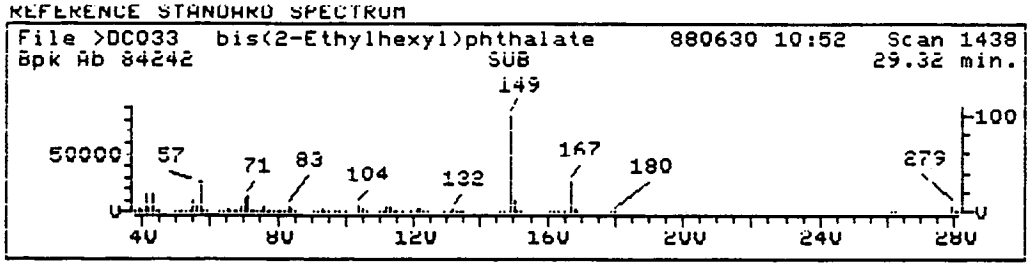


Data File: >FC432::D5 Quant Output File: ^FC432::QT
Name: WILLOW GROVE
Misc: EA#2104,DUP 9SL#1,SOIL,10.08g,1mL BTL# 5
Quant Time: 890614 04:00 Quant ID File: IDFCLP::BD
Injected at: 890614 03:19 Last Calibration: 890613 23:59

Compound No: 22
Compound Name: Benzoic Acid
Scan Number: 396
R tention Time: 9.86 min.
Quant Ion: 122.0
Area: 1484
Concentration: 3.19 NG
q-value: 92

REFERENCE STANDARD SPECTRUM



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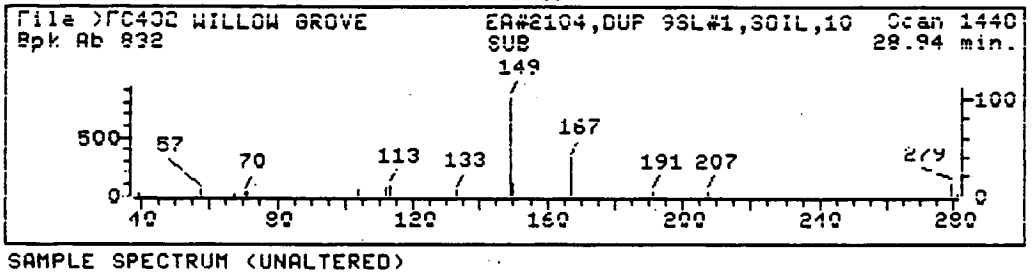
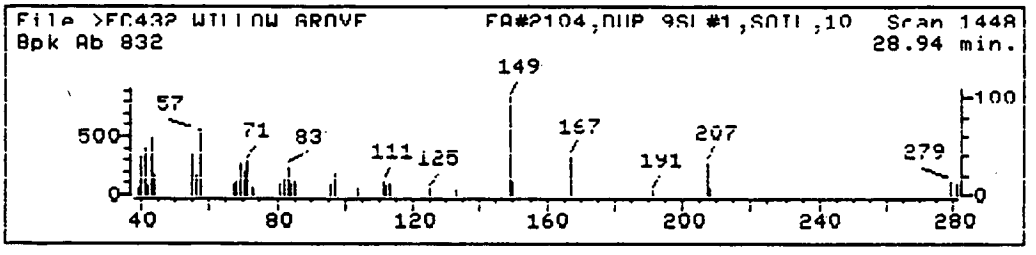
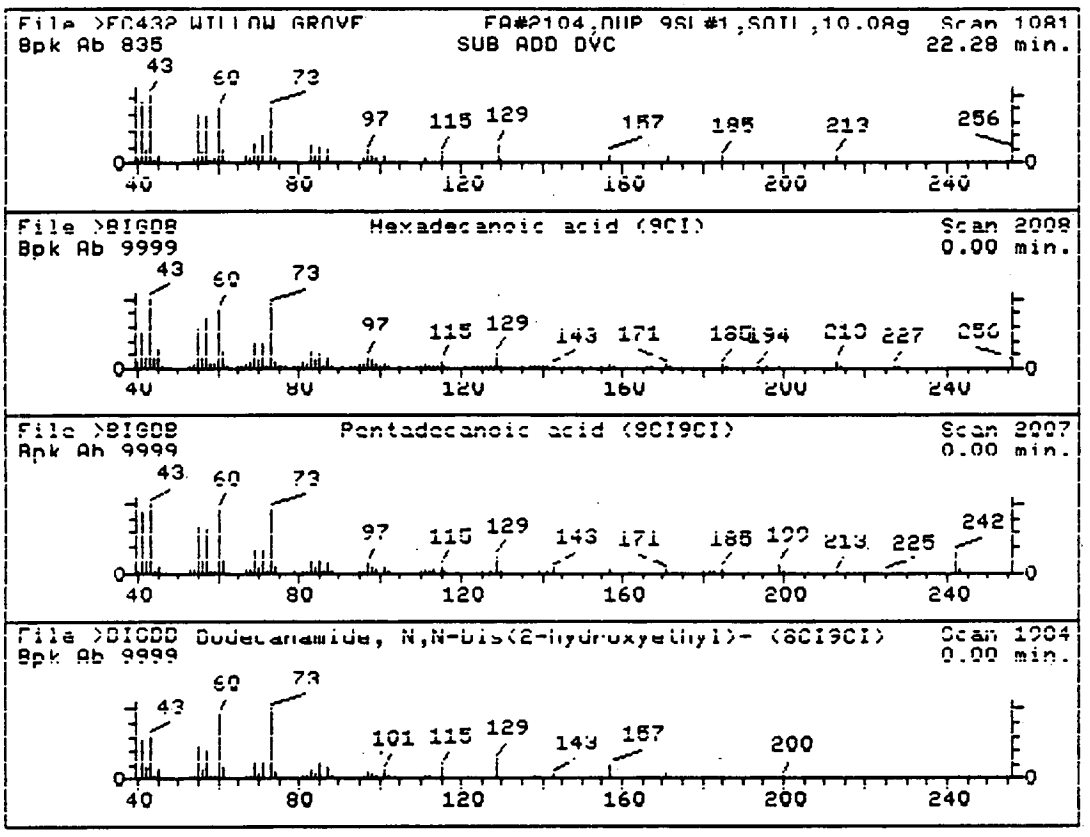


SAMPLE SPECTRUM (UNALTERED)



Data File: >FC432::D5 Quant Output File: ^FC432::QT
Name: WILLOW GROVE
Misc: EA#2104,DUP 9SL#1,SOIL,10.08g,1mL BTL# 5
Quant Time: 890614 04:00 Quant ID File: IDFCLP::BD
Injected at: 890614 03:19 Last Calibration: 890613 23:59

Compound No: 68
Compound Name: bis(2-Ethylhexyl)phthalate
Scan Number: 1448
Retention Time: 28.94 min.
Quant Ion: 149.0
Area: 1915
Concentration: 1.30 NG
q-value: 94



Retention time = 22.28

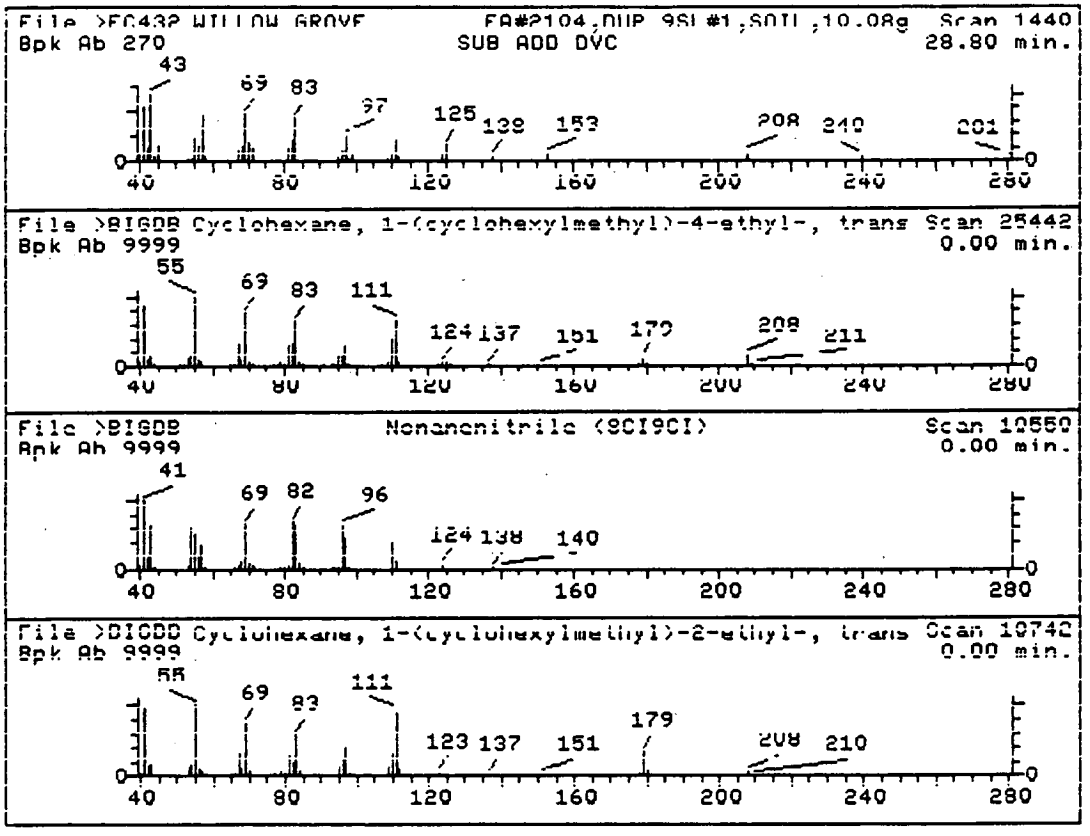
Area = 27523.00 Tentative Concentration is 600.00

1.	Hexadecanoic acid (9CI)	256	C16H32O2
2.	Pentadecanoic acid (8CI9CI)	242	C15H30O2
3.	Dodecanamide, N,N-bis(2-hydroxyethyl)- (8CI9CI)	287	C16H33NO3
4.	Tetradecanoic acid (9CI)	228	C14H28O2
5.	Glycine, N-methyl-N-(1-oxododecyl)- (9CI)	271	C15H29NO3
6.	Heptanoic acid (8CI9CI)	130	C7H14O2
7.	Isoxazolidine, 5-ethyl-2,4-dimethyl-, cis- (9CI)	129	C7H15NO

Sample file: >FC432 Spectrum #: 1081
Search speed: 2 Tilting option: S No. of ion ranges search d: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	75*	57103	2008	"BIGDB	97	54	3	0	88	20	35		61	
2.	52	1002842	2007	"BIGDB	101	49	3	-1	80	16	20		14	

3.	51	120401	1984	"BIGDB	75	78	1	0	76	27	19	29
4.	37	544638	2005	"BIGDB	78	68	3	0	82	27	14	14
5.	33	97789	1972	"BIGDB	58	92	1	0	82	33	12	16
6.	26*	111148	1881	"BIGDB	30	67	2	0	62	42	8	14
7.	20*	56701021	1930	"BIGDB	23	72	3	0	167	55	5	12



R t ntion time = 28.80

Area = 84704.00 Tentative Concentration is 1600.00

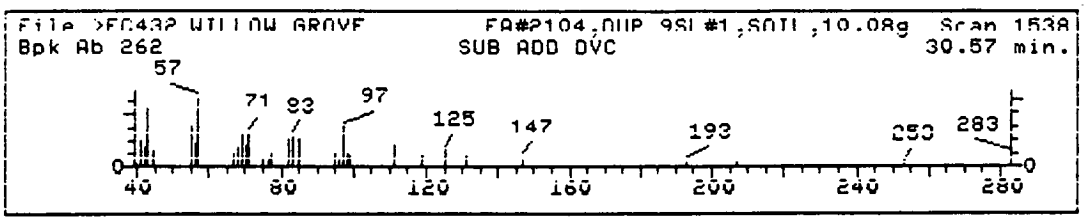
1. Cyclohexane, 1-(cyclohexylmethyl)-4-ethyl-, trans- (9CI) 208 C15H28
2. Nonanenitrile (8CI9CI) 139 C9H17N
3. Cyclohexane, 1-(cyclohexylmethyl)-2-ethyl-, trans- (9CI) 208 C15H28
4. Isoheptadecanol (9CI) 256 C17H36O
5. Phosphonic acid, dioctadecyl ester (8CI9CI) 586 C36H75O3P
6. Cyclopentane, 1,1,3-trimethyl- (8CI9CI) 112 C8H16
7. Cyclohexane, 1,1'-propylidenebis- (9CI) 208 C15H28

Unknown

Sampl file: >FC432 Spectrum #: 1440
S arch speed: 2 Tilting option: S No. of ion ranges searched: 57

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	57*	54934940	25442	"BIGDB	62	73	3	0	92	25	22		29	
2.	27*	2243278	10550	"BIGDB	43	70	3	0	81	40	10		13	
3.	27*	54934928	10742	"BIGDB	32	108	3	0	93	37	10		13	
4.	25	57289073	8454	"BIGDB	74	100	3	0	50	43	8		13	
5.	25	19047859	8329	"BIGDB	73	127	3	0	56	43	8		13	
6.	20*	4516692	8270	"BIGDB	42	68	3	0	72	52	5		13	

7.	20*	54934917	13098	"BIGDB	24	111	3	0	68	53	5	12

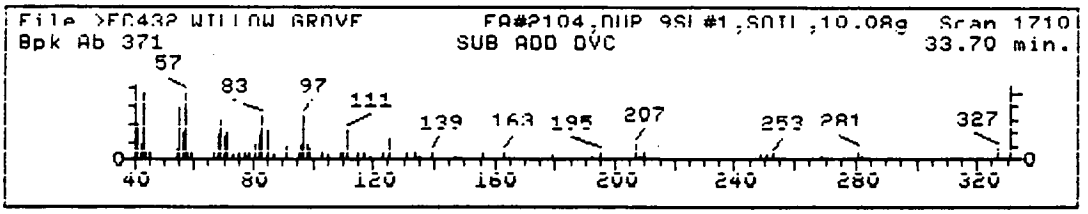


Retention time = 30.57

Area = 26463.00 Tentative Concentration is 610.00

Sample file: >FC432 Spectrum #: 1538

No data base entries were retrieved.

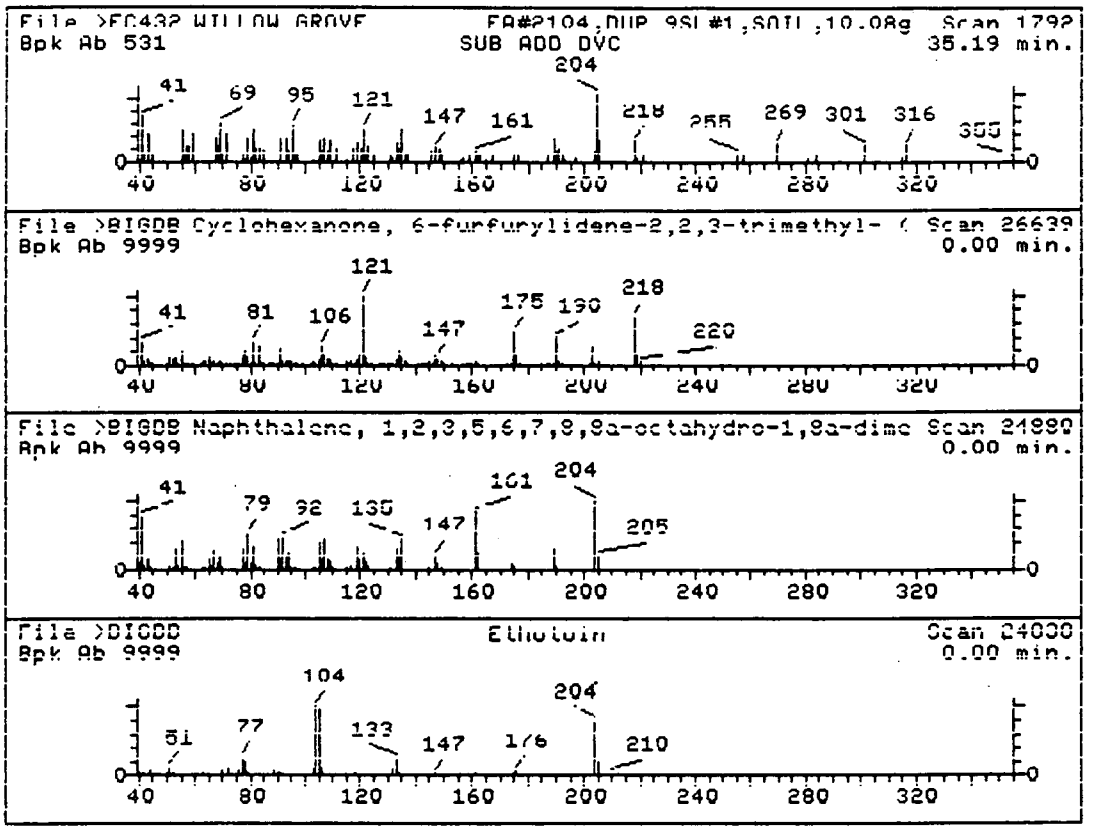


Retention time = 33.70

Area = 56870.00 Tentative Concentration is 1300.00

Sample file: >FC432 Spectrum #: 1710

No data base entries were retrieved.



Retention time = 35.19

Area = 37905.00 Tentative Concentration is 880.00

1. Cyclohexanone, 6-furfurylidene-2,2,3-trimethyl- (8CI 218 C14H18O2
2. Naphthalene, 1,2,3,5,6,7,8,8a-octahydro-1,8a-dimethyl-7-(1-methylethenyl)-, [1R-(1.alpha.,7.beta.,8a.alpha.)]- (9CI) 204 C15H24
3. Ethotoin 204 C11H12N2O2
4. 5H-Dibenzo[a,d]cycloheptene, 5-methylene- (8CI9CI) 204 C16H12
5. Naphthalene, 1,2,4a,5,8,8a-hexahydro-4,7-dimethyl-1-(1-methylethyl)-, [1S-(1.alpha.,4a.beta.,8a.alpha.)]- (9CI) 204 C15H24
6. Caulophylline 204 C12H16N2O
7. [1,1'-Biphenyl]-4,4'-dicarbonitrile (9CI) 204 C14H8N2

Unknown

Sample file: >FC432 Spectrum #: 1792
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	26*	17429559	26639	"BIGDB	45	89	2	1	27	38		10		12
2.	23*	4630073	24880	"BIGDB	90	72	3	-1	83	56		6		45
3.	20*	86351	24838	"BIGDB	30	99	3	0	129	51		5		13
4.	20*	2975793	24874	"BIGDB	23	107	3	0	100	51		5		12

5.	15*	523477	24854	"BIGDB	49	82	3	0	192	56	3	13
6.	15*	486862	24846	"BIGDB	23	78	3	0	384	56	3	12
7.	15*	1591306	24867	"BIGDB	24	86	2	0	92	56	3	14

LIBRARY SEARCH SUMMARY

MS Data File:>FC432::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 6/14/89 3:19
Misc:EA#2104,DUP 9SL#1,SOIL,10.08g,1mL BTL# 5

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	22.28	27523	22239
2	28.80	84704	24734
3	30.57	26463	20833
4	33.70	56870	20833
5	35.19	37905	20833

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#2155,BL0330 B-1 Comp.

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/05/89
Date Analyzed: 5/31/89 0:48
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup _ Yes ✓ No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U	83-32-9	Acenaphthene	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U	51-28-5	2,4-Dinitrophenol	5900.	U
95-57-8	2-Chlorophenol	1200.	U	100-02-7	4-Nitrophenol	5900.	U
541-73-1	1,3-Dichlorobenzene	1200.	U	132-64-9	Dibenzofuran	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U	121-14-2	2,4-Dinitrotoluene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U	606-20-2	2,6-Dinitrotoluene	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U	84-66-2	Diethylphthalate	1200.	U
95-48-7	2-Methylphenol	1200.	U	7005-72-3	4-Chlorophenyl-phenylether	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U	86-73-7	Fluorene	1200.	U
106-44-5	4-Methylphenol	1200.	U	100-01-6	4-Nitroaniline	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U	534-52-1	4,6-Dinitro-2-methylphenol	5900.	U
67-72-1	Hexachloroethane	1200.	U	86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
98-95-3	Nitrobenzene	1200.	U	101-55-3	4-Bromophenyl-phenylether	1200.	U
78-59-1	Isophorone	1200.	U	118-74-1	Hexachlorobenzene	1200.	U
88-75-5	2-Nitrophenol	1200.	U	87-86-5	Pentachlorophenol	5900.	U
105-67-9	2,4-Dimethylphenol	1200.	U	85-01-8	Phenanthrene	1200.	U
65-85-0	Benzoic Acid	5900.	U	120-12-7	Anthracene	1200.	U
111-91-1	bis(2-Chloroethoxy)methane	1200.	U	84-74-2	Di-n-Butyl phthalate	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U	206-44-0	Fluoranthene	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U	129-00-0	Pyrene	1200.	U
91-20-3	Naphthalene	1200.	U	85-68-7	Butylbenzylphthalate	1200.	U
106-47-8	4-Chloroaniline	1200.	U	91-94-1	3,3'-Dichlorobenzidine	2400.	U
87-68-3	Hexachlorobutadiene	1200.	U	56-55-3	Benzo(a)Anthracene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U	117-81-7	bis(2-Ethylhexyl)phthalate	140.	J B
91-57-6	2-Methylnaphthalene	2100.		218-01-9	Chrysene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U	117-84-0	Di-n-Octyl phthalate	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U	205-99-2	Benzo(b)Fluoranthene	1200.	U
95-95-4	2,4,5-Trichlorophenol	5900.	U	207-08-9	Benzo(k)Fluoranthene	1200.	U
91-58-7	2-Chloronaphthalene	1200.	U	50-32-8	Benzo(a)Pyrene	1200.	U
88-74-4	2-Nitroaniline	5900.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
131-11-3	Dimethylphthalate	1200.	U	53-70-3	Dibenzo(a,h)Anthracene	1200.	U
208-96-8	Acenaphthylene	1200.	U	191-24-2	Benzo(g,h,i)Perylene	1200.	U
99-09-2	3-Nitroaniline	5900.	U				

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BLD 330B-1 GMP

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: _____ Case No.: WillowGr SAS No.: _____ SDG No.: _____

Matrix: (soil/~~water~~) Soil Lab Sample ID: EA#2151

Sample wt/vol: 10.00 (g/~~mL~~) ____ Lab File ID: >FC309

Level: (low/~~med~~) Low Date Received: 5/4/89

% Moisture: not dec. 15.7 dec. ~~15.7~~ Date Extracted: 5/5/89

Extraction: (SepF/Cont/Sonc) Cont Date Analyzed: 5/3/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: _____

Number TICs found: 20

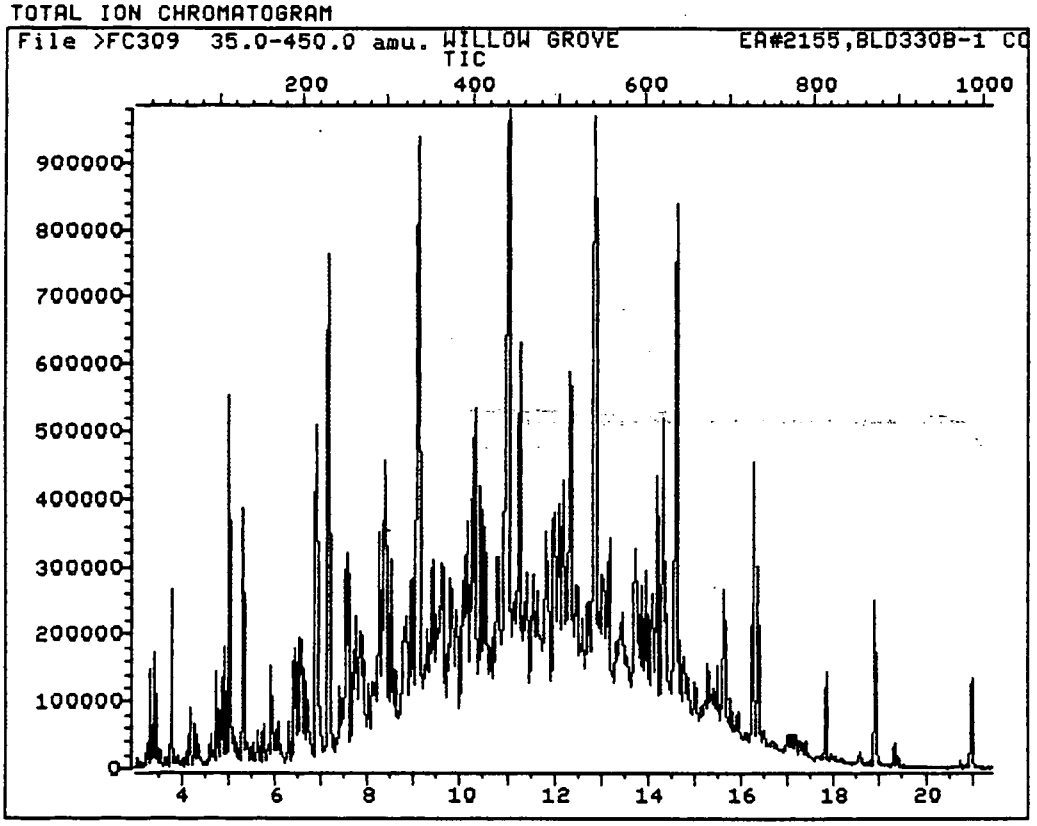
CONCENTRATION UNITS: (~~ug/L or~~ ug/Kg) _____

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. —	UNIDENTIFIED ALKANE	6.44	5500 J	
2. —	UNIDENTIFIED ETHYL-METHYL BENZENE	6.57	5300 J	
3. —	UNIDENTIFIED ALKANE	7.17	15000 J	
4. 1074437	1-methyl-3-propyl Benzene	8.26	5300 J	
5. —	Unknown	8.39	12000 J	
6. —	UNIDENTIFIED ALKANE	9.63	980 J	
7. 824226	1H-Indene 2,3-dihydro-4-methyl	10.07	970 J	
8. —	UNIDENTIFIED ALKANE	10.14	980 J	
9. —	UNIDENTIFIED ALKANE	10.32	1600 J	
10. —	UNIDENTIFIED SUBSTITUTED Cyclohexane	10.84	1100 J	
11. —	UNIDENTIFIED ALKANE	11.27	1400 J	
12. —	UNKNOWN	11.84	1300 J	
13. —	UNIDENTIFIED ALKANE	12.02	1400 J	
14. —	UNIDENTIFIED ALKANE	12.19	1100 J	
15. 62016346	2,3,7-Trimethyloctane	12.35	2200 J	
16. —	UNIDENTIFIED ALKANE	12.88	4200 J	
17. —	UNKNOWN	13.74	5000 J	
18. —	UNIDENTIFIED ALKANE	14.20	4500 J	
19. —	UNIDENTIFIED ALKANE	14.62	14000 J	
20. —	UNIDENTIFIED ALKANE	15.04	4400 J	
21.				
22.				
23.				
24.				
25.				
26.				
27.				
28.				
29.				
30.				

FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



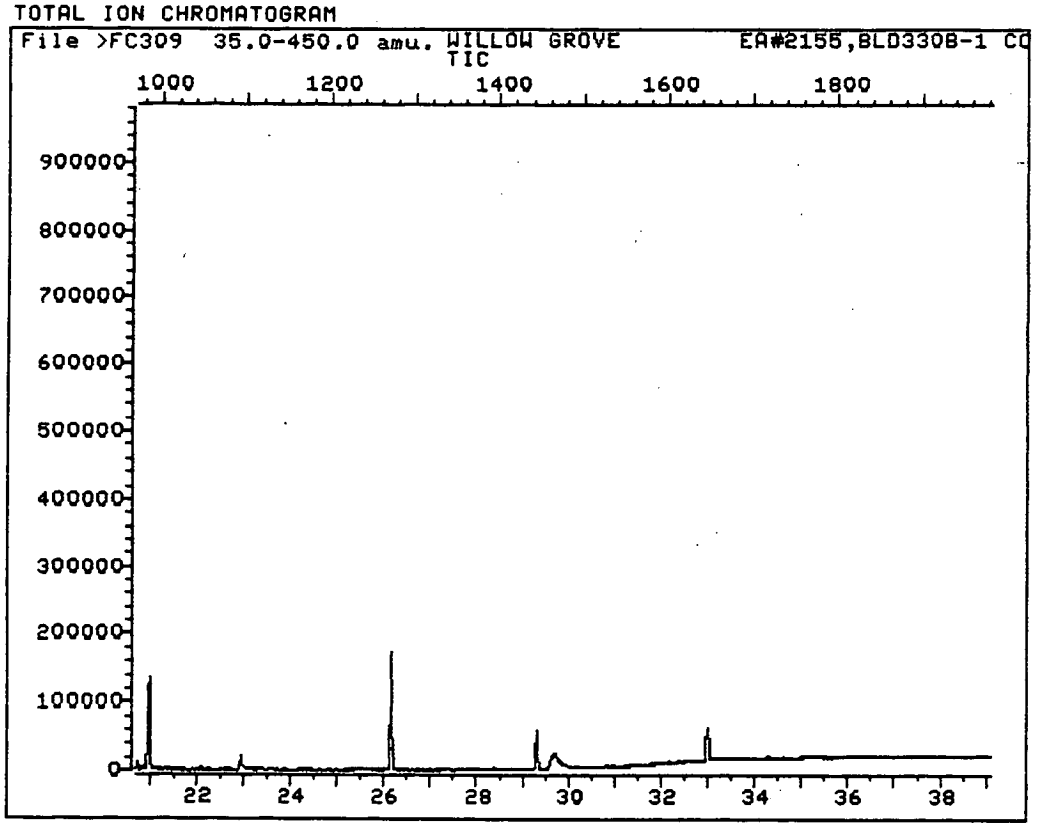
Data File: >FC309::D4 Quant Output File: ^FC309::QT
Nam : WILLOW GROVE
Misc: EA#2155,BLD330B-1 COMP.,SOIL,10.00g,1mL BTL# 3

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 01:31
Injected at: 890531 00:48

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC309::D4 Quant Output File: ^FC309::QT
Name: WILLOW GROVE
Mi c: EA#2155,BLD330B-1 COMP.,SOIL,10.00g,1mL BTL# 3

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 01:31
Injected at: 890531 00:48

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant R v: 6 Quant Time: 890531 01:31
Output File: ^FC309::QT Injected at: 890531 00:48
Data File: >FC309::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2155,BLD330B-1 COMP.,SOIL,10.00g,1mL BTL# 3

ID File: IDFCLP::8D
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.54	152.0	97211	40.00	NG	95
2)	2-Fluorophenol	5.02	112.0	328758	101.62	NG 51%	85
3)	Phenol-d5	6.90	99.0	432679	107.13	NG 54%	95
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	7.43	93.0	1420	~~.41~~	NG	82
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.96	136.0	294539	40.00	NG	87
17)	Nitrobenzene-d5	9.08	82.0	139127	55.97	NG 56%	84
18)	Nitrobenzene	8.79	77.0	11005	~~4.14~~	NG	89
19)	Isophorone	9.49	82.0	23995	~~4.11~~	NG	99
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	B nzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	11.02	128.0	29983	~~4.37~~	NG	90
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-M thylnaphthalene	13.08	142.0	70814	17.47	NG	85
31)	*d10-Acenaphthene	16.35	164.0	155218	40.00	NG	92
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	14.33	172.0	415476	71.63	NG 72%	94
37)	2-Nitroaniline	15.31	65.0	1574	~~1.31~~	NG	79
38)	Dimethylphthalate	16.37	163.0	52498	~~8.24~~	NG	52
39)	Acenaphthylene	15.35	152.0	2180	~~.31~~	NG	96
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	16.87	153.0	832	~~.18~~	NG	79
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

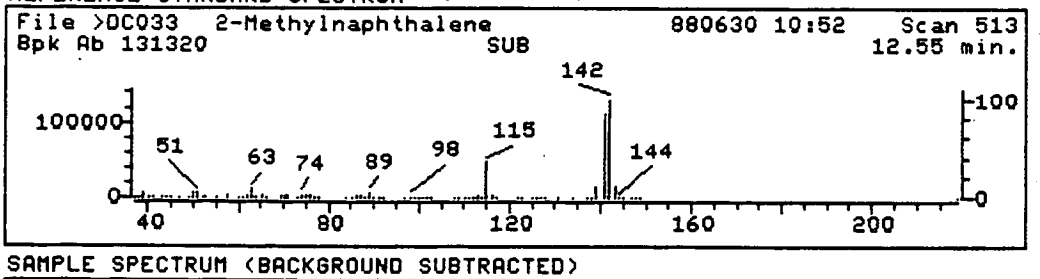
QUANT REPORT
page 2

Output File:^FC309:: Data File:>FC309::D4

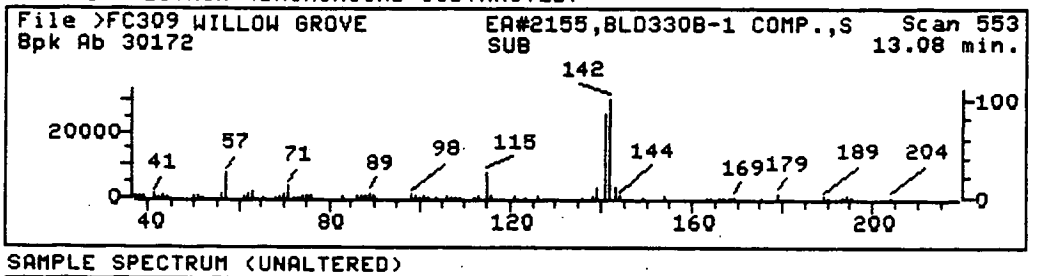
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	16.96	168.0	1210	~~.22~~	NG	79
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	18.03	166.0	2102	~~.58~~	NG	99
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	21.00	188.0	152513	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.89	329.9	107547	141.58	NG 412	93
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	21.05	178.0	1428	~~.37~~	NG	95
59)	Anthracene	21.05	178.0	1428	~~.39~~	NG	95
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	29.31	240.0	55672	40.00	NG	96
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	26.17	244.0	182453	86.48	NG 86%	84
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	29.59	149.0	2922	1.22	NG ✓	97
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.99	264.0	58911	40.00	NG	93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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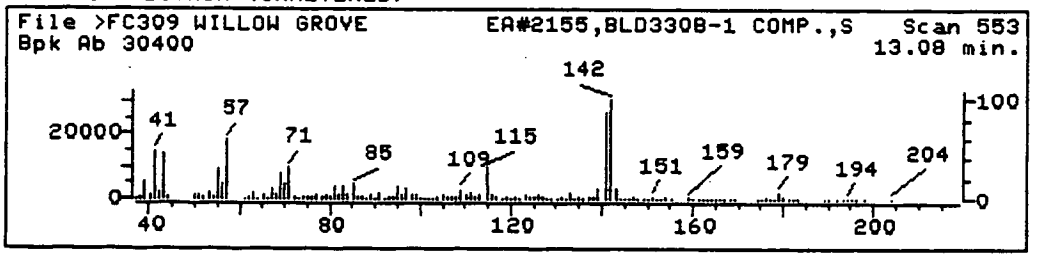
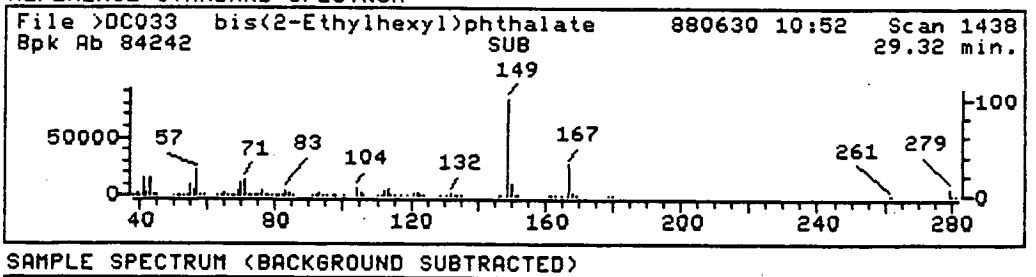


Data File: >FC309::D4 Quant Output File: ^FC309::QT
Nam : WILLOW GROVE
Misc: EA#2155,BLD330B-1 COMP.,SOIL,10.00g,1mL BTL# 3
Quant Time: 890531 01:31 Quant ID File: IDFCLP::BD
Injected at: 890531 00:48 Last Calibration: 890530 23:48

Compound No: 30
Compound Name: 2-Methylnaphthalene
Scan Number: 553
Retention Time: 13.08 min.
Quant Ion: 142.0
Area: 70814
Concentration: 17.47 NG
q-value: 85

REFERENCE STANDARD SPECTRUM



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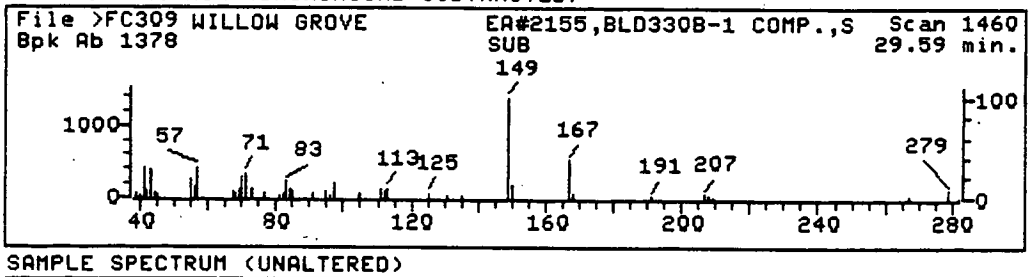
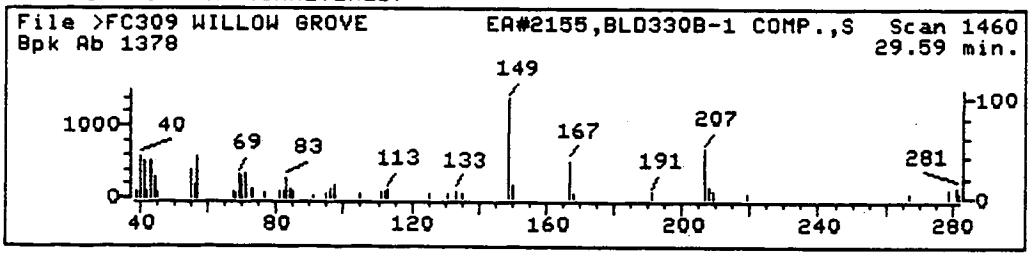
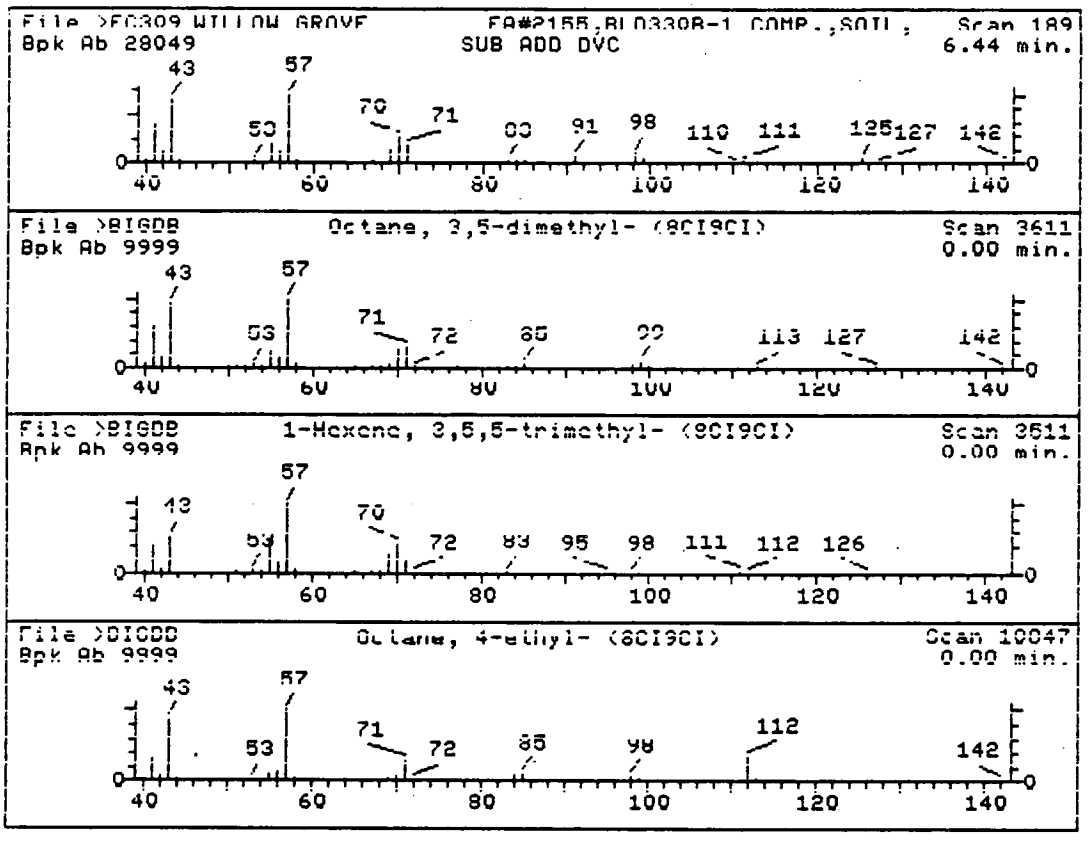


SAMPLE SPECTRUM (UNALTERED)



Data File: >FC309::D4 Quant Output File: ^FC309::QT
Name: WILLOW GROVE
Misc: EA#2155,BLD330B-1 COMP.,SOIL,10.00g,1mL BTL# 3
Quant Time: 890531 01:31 Quant ID File: IDFCLP::BD
Injected at: 890531 00:48 Last Calibration: 890530 23:48

Compound No: 68
Compound Name: bis(2-Ethylhexyl)phthalate
Scan Number: 1460
Retention Time: 29.59 min.
Quant Ion: 149.0
Area: 2922
Concentration: 1.22 NG
q-value: 97



Retention time = 6.44

Area = 855040.0 Tentative Concentration is 5500.00

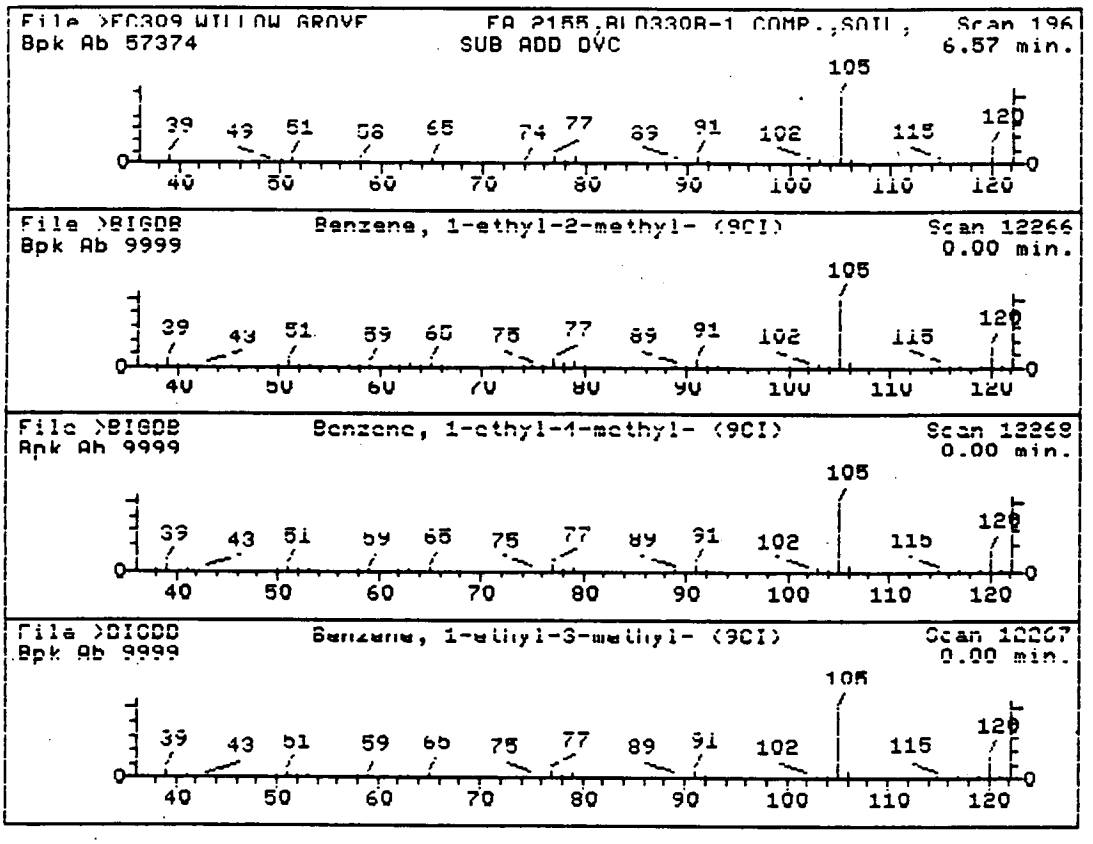
1. Octane, 3,5-dimethyl- (8CI9CI)	142	C10H22
2. 1-Hexene, 3,5,5-trimethyl- (8CI9CI)	126	C9H18
3. Octane, 4-ethyl- (8CI9CI)	142	C10H22
4. Undecane, 6-methyl- (8CI9CI)	170	C12H26
5. Decane, 2,5,9-trimethyl- (9CI)	184	C13H28
6. Heptane, 2,3,6-trimethyl- (8CI9CI)	142	C10H22
7. 2-Hexene, 3,5,5-trimethyl- (8CI)	126	C9H18

UNIDENTIFIED ALKANE

Sample file: >FC309 Spectrum #: 189
Search peed: 2 Tilting option: S No. of ion ranges searched: 57

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	66*	15869939	3611	"BIGDB	42	51	0	0	67	19	31		44	
2.	63*	4316658	3511	"BIGDB	49	41	2	0	88	16	30		30	

3.	43*	15869860	10847	"BIGDB	25	68	2	0	92	24	17	14
4.	41	17302339	8567	"BIGDB	35	43	0	0	92	29	14	18
5.	38	62108229	3927	"BIGDB	44	47	1	0	85	26	14	15
6.	37	4032933	3607	"BIGDB	28	54	0	0	100	27	14	14
7.	36	26456768	3716	"BIGDB	36	45	1	0	89	29	14	13



Ret ntion time = 6.57

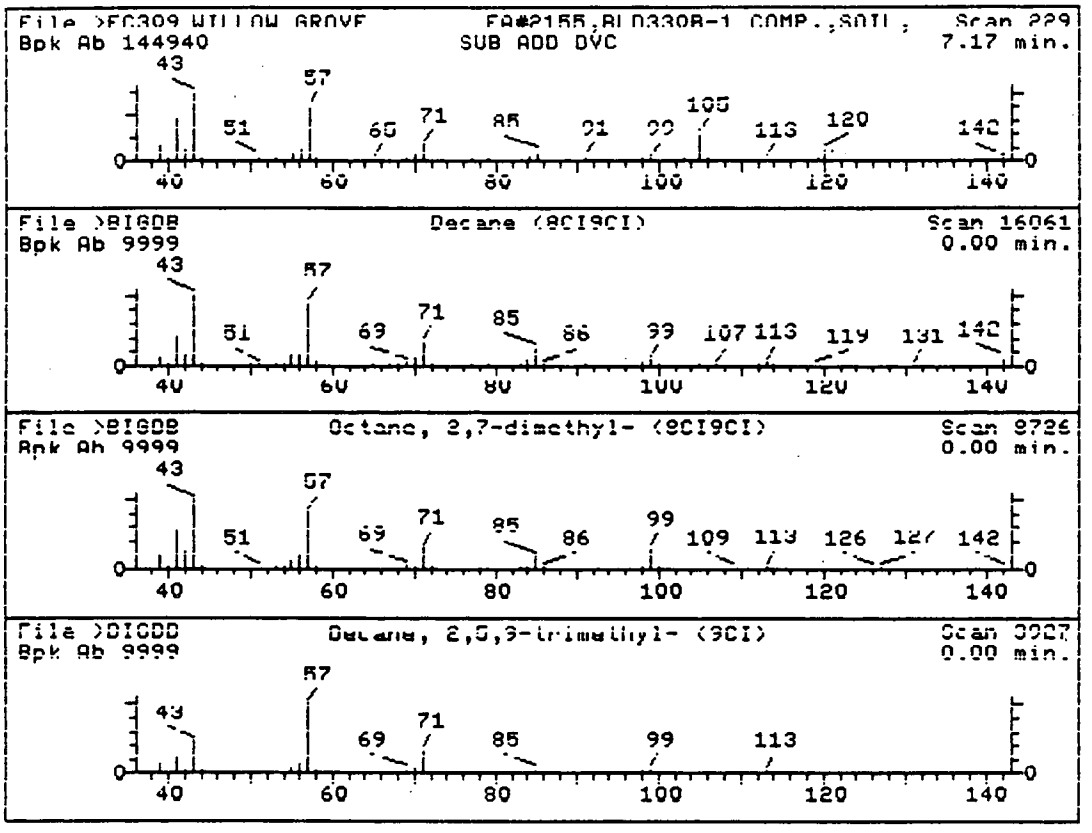
Area = 813198.0 Tentative Concentration is 5300.00

UNIDENTIFIED

1. Benzene, 1-ethyl-2-methyl- (9CI)	120	C9H12
2. Benzene, 1-ethyl-4-methyl- (9CI)	120	C9H12
3. Benzene, 1-ethyl-3-methyl- (9CI)	120	C9H12
4. Benzene, (1-methylethyl)- (9CI)	120	C9H12
5. Benzene, 1,2,3-trimethyl- (8CI9CI)	120	C9H12
6. Benzene, 1,2,4-trimethyl- (8CI9CI)	120	C9H12
7. 1,3,5-Cycloheptatriene, 7-ethyl- (8CI9CI)	120	C9H12

Sample file: >FC309 Spectrum #: 196
Search speed: 2 Tilting option: S No. of ion ranges searched: 52

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	96*	611143	12266	"BIGDB	80	5	1	0	87	3	72	96
2.	93*	622968	12268	"BIGDB	68	17	1	0	80	5	68	80
3.	89*	620144	12267	"BIGDB	69	18	2	0	82	3	66	60
4.	76*	98828	12259	"BIGDB	65	22	2	0	97	11	40	55
5.	49*	526738	12280	"BIGDB	61	39	2	0	55	37	17	38
6.	31*	95636	12273	"BIGDB	38	42	2	0	47	44	8	19
7.	26*	17634514	12269	"BIGDB	31	70	2	0	84	42	8	14



Retention time = 7.17

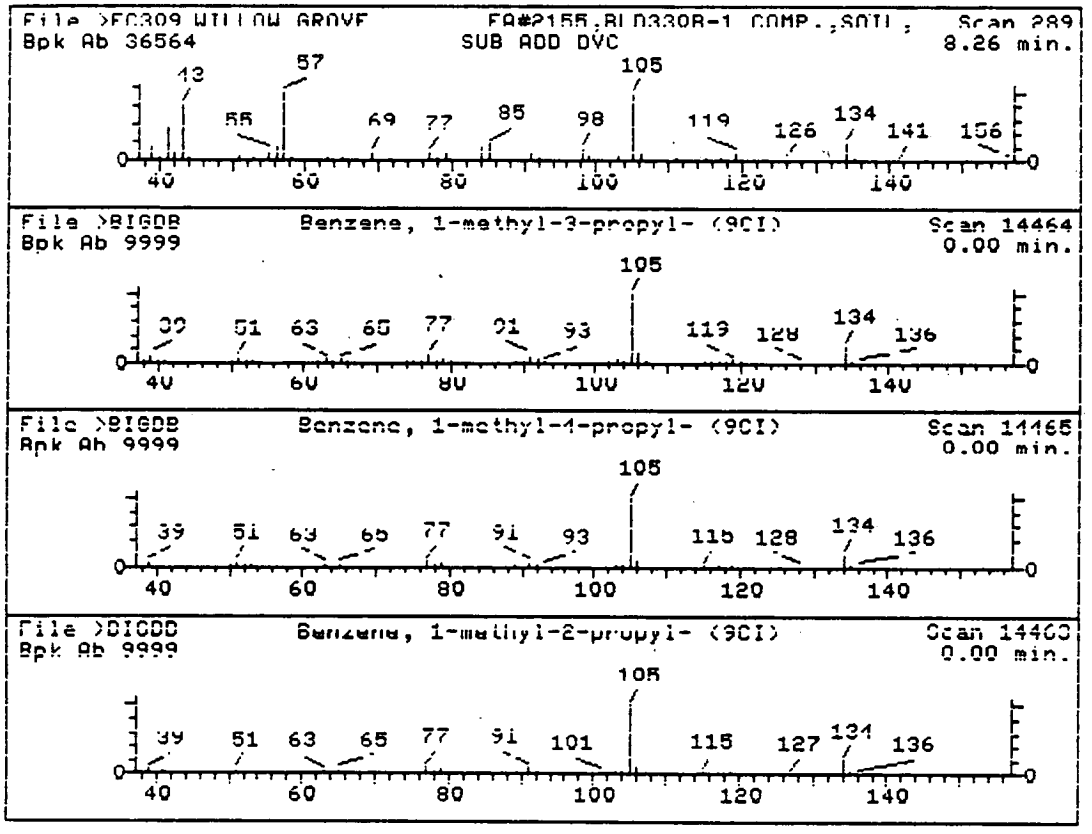
Area = 2373204. Tentative Concentration is 15000.00

1.	Decane (8CI9CI)	142	C10H22
2.	Octane, 2,7-dimethyl- (8CI9CI)	142	C10H22
3.	Decane, 2,5,9-trimethyl- (9CI)	184	C13H28
4.	Octane, 4-ethyl- (8CI9CI)	142	C10H22
5.	Octane, 2,4,6-trimethyl- (9CI)	156	C11H24
6.	Nonane, 2-methyl- (8CI9CI)	142	C10H22
7.	Decane, 6-ethyl-2-methyl- (9CI)	184	C13H28

Unidentified Alkane

Sample file: >FC309 Spectrum #: 229
Search peed: 2 Tilting option: S No. of ion ranges search d: 82

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	87*	124185	16061	"BIGDB	91	9	1	3	90	37	47	92
2.	63*	1072168	8726	"BIGDB	54	41	2	0	72	20	30	34
3.	59	62108229	3927	"BIGDB	53	38	0	0	72	22	27	31
4.	58*	15869860	10847	"BIGDB	43	50	2	0	78	18	25	23
5.	58	62016379	6004	"BIGDB	63	22	1	1	69	18	25	23
6.	58*	871830	8635	"BIGDB	51	45	2	0	62	18	25	28
7.	52	62108218	6163	"BIGDB	60	39	2	1	61	18	20	14



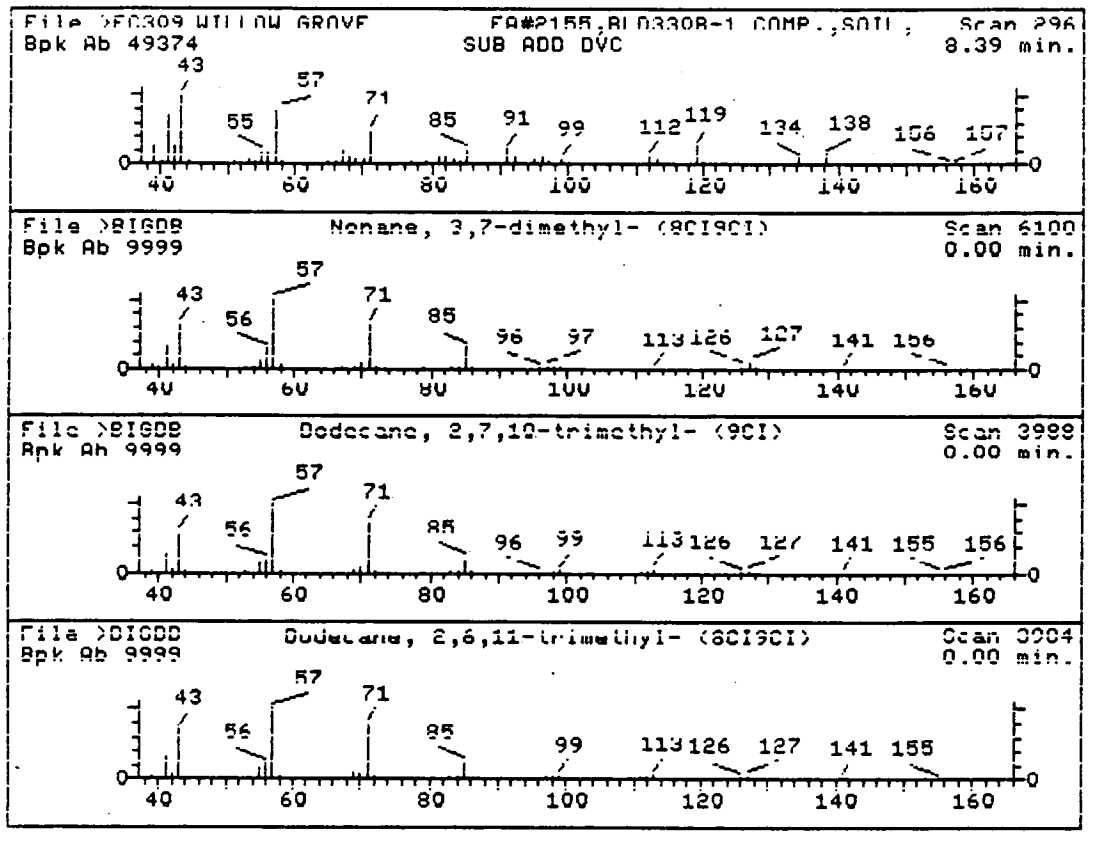
Retention time = 8.26

Area = 812328.0 Tentative Concentration is 5300.00

1.	Benzene, 1-methyl-3-propyl- (9CI)	134	C10H14
2.	Benzene, 1-methyl-4-propyl- (9CI)	134	C10H14
3.	Benzene, 1-methyl-2-propyl- (9CI)	134	C10H14
4.	Benzene, (1-methylpropyl)- (9CI)	134	C10H14
5.	2,4-Heptadien-6-ynal, (E,E)- (8CI9CI)	106	C7H6O
6.	Phenol, o-[(.alpha.-methylbenzyl)sulfonyl]- (8CI)	262	C14H14O3S
7.	Benzene, (1,2,2-trimethyl-3-butenyl)- (9CI)	174	C13H18

Sample file: >FC309 Spectrum #: 289
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	91*	1074437	14464	"BIGDB	76	11	1	0	97	32	50			94
2.	78*	1074551	14465	"BIGDB	67	16	1	0	97	33	40			80
3.	64*	1074175	14463	"BIGDB	62	23	2	0	97	33	22			49
4.	50*	135988	14459	"BIGDB	50	36	1	0	78	39	19			41
5.	26*	7200046	9911	"BIGDB	29	59	2	0	68	45	8			14
6.	25	29634386	9913	"BIGDB	64	36	2	1	97	47	7			15
7.	25	61142174	9915	"BIGDB	50	36	1	0	97	47	7			19



Retention time = 8.39

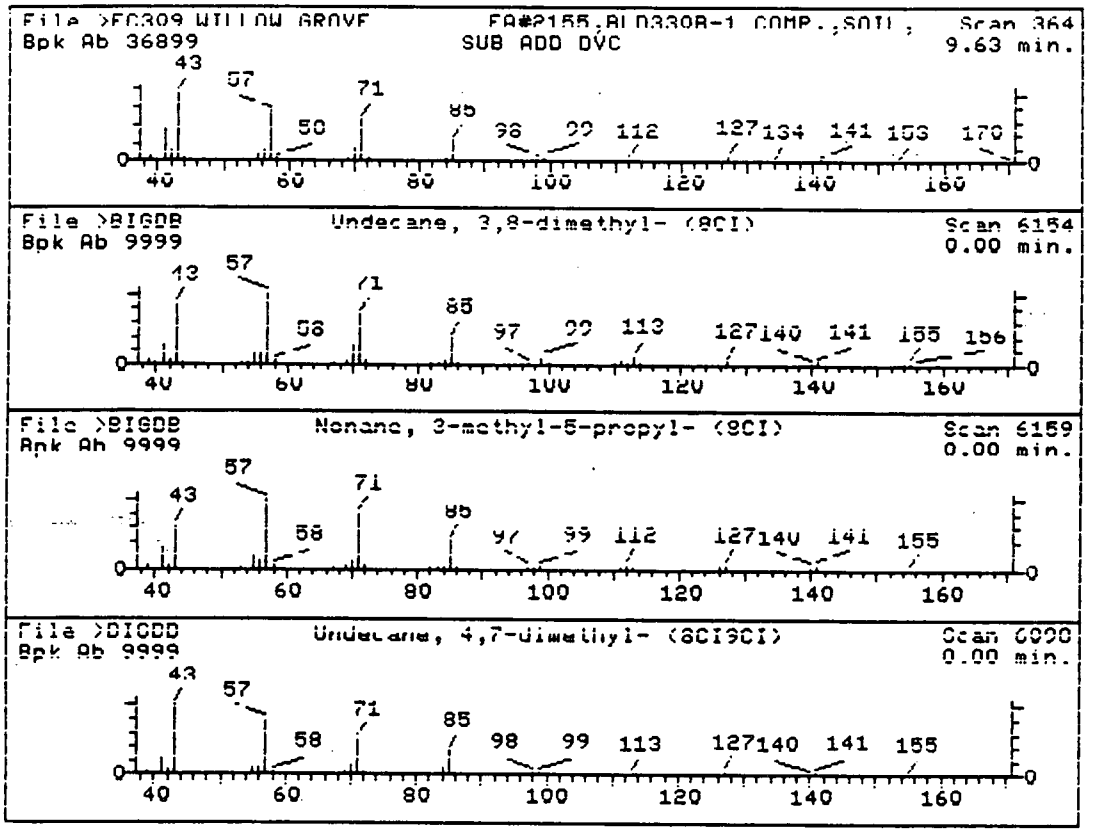
Area = 1794042. Tentative Concentration is 12000.00

1. Nonane, 3,7-dimethyl- (8CI9CI) 156 C11H24
2. Dodecane, 2,7,10-trimethyl- (9CI) 212 C15H32
3. Dodecane, 2,6,11-trimethyl- (8CI9CI) 212 C15H32
4. Cyclohexanol, 5-methyl-2-(1-methylethyl)-, (1.alpha. ,2.alpha.,5.alpha.)- (9CI) 156 C10H20O
5. D cane, 2-methyl- (8CI9CI) 156 C11H24
6. Cyclohexanol, 5-methyl-2-(1-methylethyl)-, (1.alpha. ,2.alpha.,5.beta.)- (9CI) 156 C10H20O
7. Pentane, 2,3,3-trimethyl- (8CI9CI) 114 C8H18

Sample file: >FC309 Spectrum #: 296
Search speed: 2 Tilting option: S No. of ion ranges searched: 68

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	32*	17302328	6100	"BIGDB	56	30	2	0	60	55		9		42
2.	30	74645980	3988	"BIGDB	76	33	2	0	66	48		10		25
3.	30	31295564	3984	"BIGDB	71	35	2	0	64	48		10		23
4.	25*	491021	4001	"BIGDB	41	56	2	0	43	50		7		17
5.	21	6975980	11146	"BIGDB	70	30	1	0	79	57		5		33
6.	20*	491010	15317	"BIGDB	29	63	3	0	49	53		5		13

7.	20	560214	5990	"BIGDB	49	39	1	0	83	53	5	18



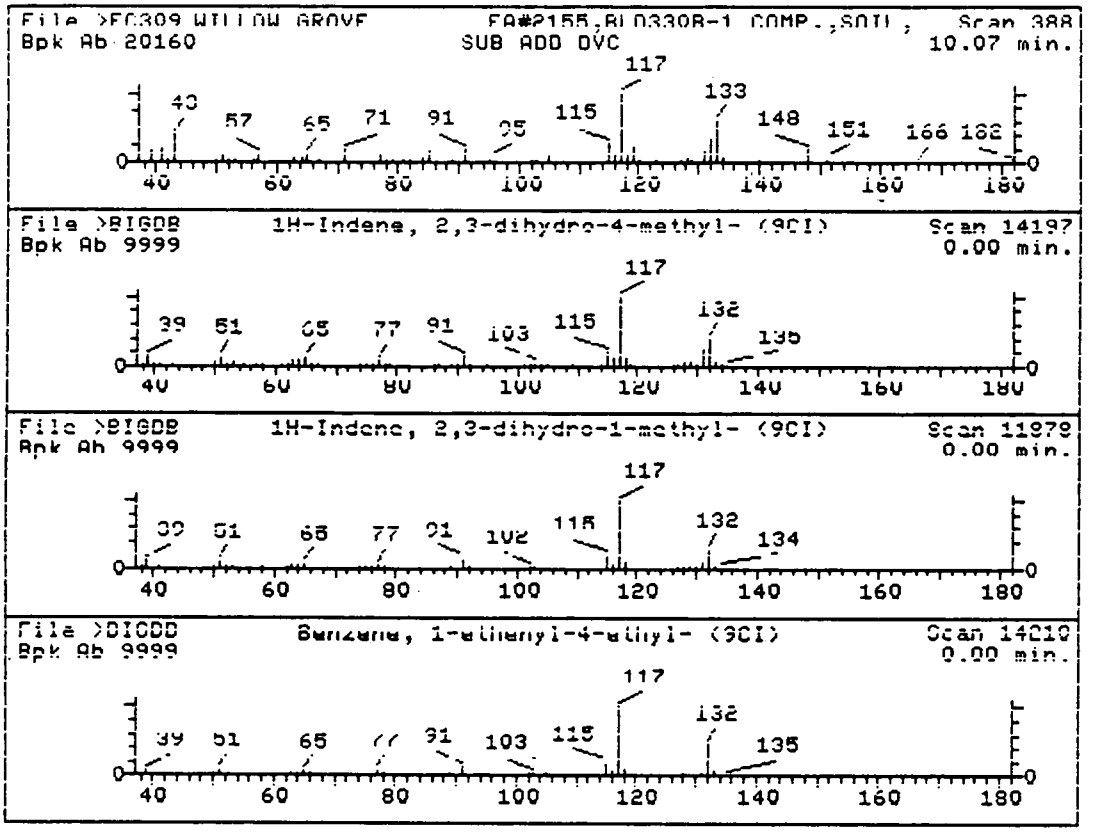
Retention time = 9.63

Area = 825313.0 Tentative Concentration is 980.00

1. Undecane, 3,8-dimethyl- (8CI)	184	C13H28
2. Nonane, 3-methyl-5-propyl- (8CI)	184	C13H28
3. Undecane, 4,7-dimethyl- (8CI9CI)	184	C13H28
4. Undecane, 2,8-dimethyl- (8CI)	184	C13H28
5. Undecane, 2-methyl- (8CI9CI)	170	C12H26
6. Heptadecane, 2,6,10,15-tetramethyl- (9CI)	296	C21H44
7. Octane, 6-ethyl-2-methyl- (9CI)	156	C11H24

Sample file: >FC309 Spectrum #: 364
Search sp ed: 2 Tilting option: S No. of ion ranges searched: 52

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	83	17301303	6154	"BIGDB	72	36	2	0	74	4	57	23
2.	79	31081182	6159	"BIGDB	75	30	1	2	81	9	48	31
3.	76	17301325	6098	"BIGDB	73	31	2	0	93	6	45	27
4.	76	17301256	6153	"BIGDB	71	33	2	0	73	8	45	25
5.	74*	7045718	6095	"BIGDB	57	37	2	0	86	15	39	40
6.	70	54833486	6161	"BIGDB	62	71	2	0	70	10	42	13
7.	70	62016197	6106	"BIGDB	52	38	2	0	86	9	42	18



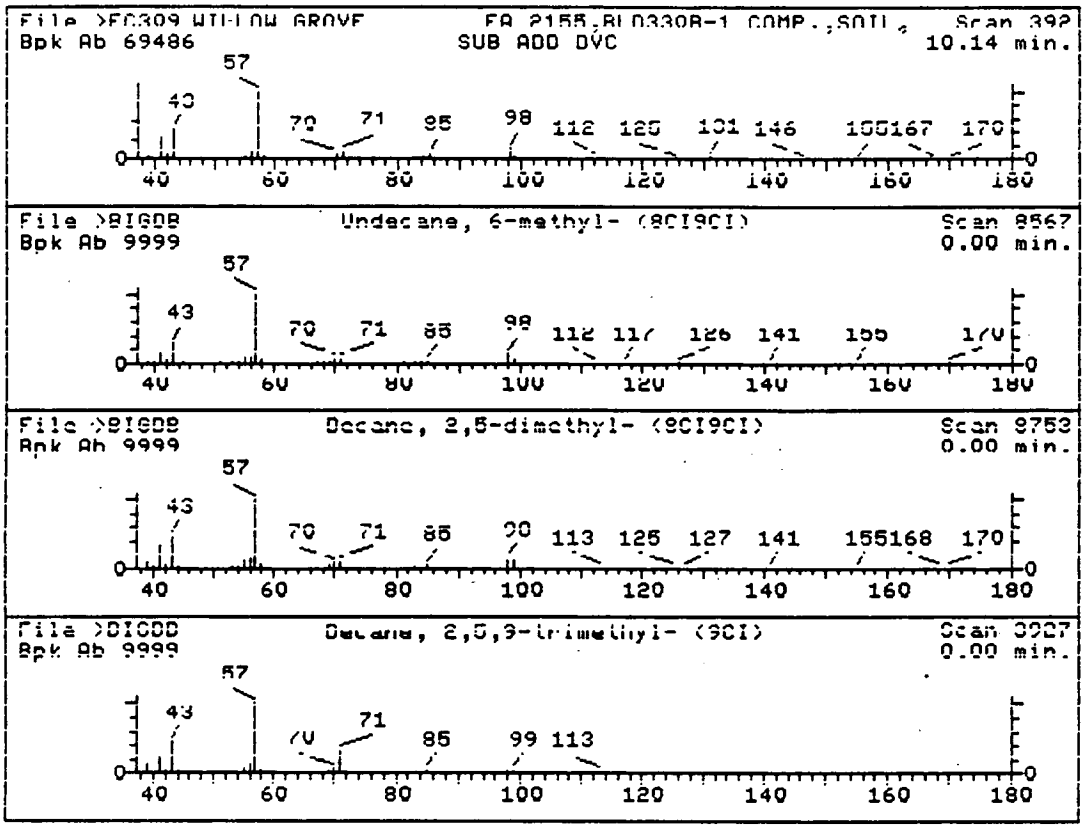
Retention time = 10.07

Area = 818818.0 Tentative Concentration is 970.00

1.	1H-Indene, 2,3-dihydro-4-methyl- (9CI)	132	C10H12
2.	1H-Indene, 2,3-dihydro-1-methyl- (9CI)	132	C10H12
3.	Benzene, 1-ethenyl-4-ethyl- (9CI)	132	C10H12
4.	Benzofuran, 5-methoxy- (8CI9CI)	148	C9H8O2
5.	Benzene, 4-ethenyl-1,2-dimethyl- (9CI)	132	C10H12
6.	Benzene, (1-methyl-1-propenyl)-, (Z)- (9CI)	132	C10H12
7.	Benzene, 1-ethenyl-3-ethyl-, mixt. with 1-ethenyl-4-ethylbenzene (9CI)	264	C20H24

Sample file: >FC309 Spectrum #: 388
Search speed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	82*	824226	14197	"BIGDB	70	37	0	0	70	42	33	89		
2.	70*	767588	11878	"BIGDB	62	35	0	0	100	38	28	74		
3.	47*	3454077	14210	"BIGDB	40	53	0	0	78	43	16	41		
4.	38*	13391281	16963	"BIGDB	48	30	0	1	18	51	11	60		
5.	36	27831136	14227	"BIGDB	75	29	2	0	95	43	12	27		
6.	32*	767997	14194	"BIGDB	75	38	1	-2	55	53	9	49		
7.	32	55319727	14233	"BIGDB	60	59	0	2	73	43	12	23		



R tention time = 10.14

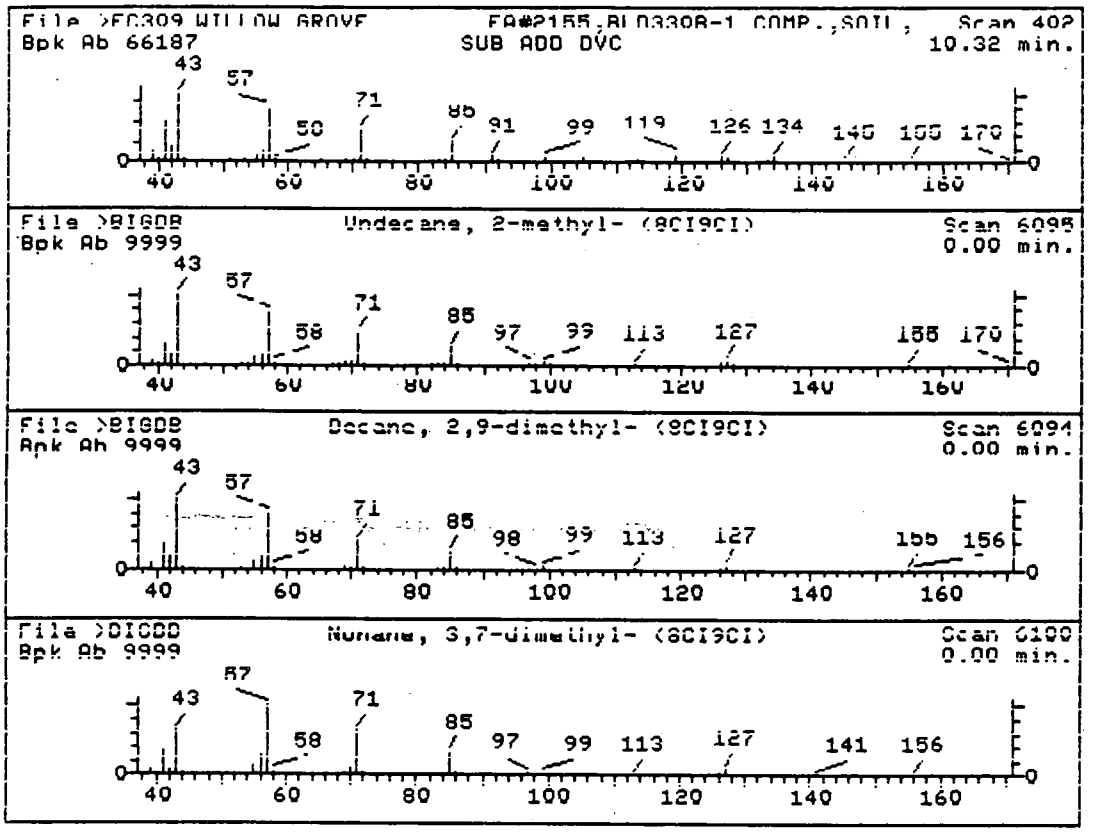
Area = 830093.0 Tentative Concentration is 980.00

1.	Und cane, 6-methyl- (8CI9CI)	170 C12H26
2.	Decane, 2,5-dimethyl- (8CI9CI)	170 C12H26
3.	Decane, 2,5,9-trimethyl- (9CI)	184 C13H28
4.	Heptane, 2,2,3,4,6,6-hexamethyl- (9CI)	184 C13H28
5.	5-Hexen-3-one (8CI9CI)	98 C6H10O
6.	Heptane, 2,3,5-trimethyl- (8CI9CI)	142 C10H22
7.	Decane, 2,2-dimethyl- (8CI9CI)	170 C12H26

Unidentified Alkanes

Sample file: >FC309 Spectrum #: 392
Search speed: 2 Tilting option: S No. of ion ranges searched: 63

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	76*	17302339	8567	"BIGDB	45	33	2	0	100	10	45		24	
2.	71*	17312504	8753	"BIGDB	53	36	2	0	87	14	38		36	
3.	52	62108229	3927	"BIGDB	45	46	2	0	94	16	20		13	
4.	52	62108321	1029	"BIGDB	39	48	2	0	72	20	20		12	
5.	52*	24253303	8521	"BIGDB	23	49	2	0	83	20	20		13	
6.	52	20278857	1203	"BIGDB	41	35	1	0	68	18	20		14	
7.	46	17302373	1024	"BIGDB	47	28	1	0	98	22	17		17	



Retention time = 10.32

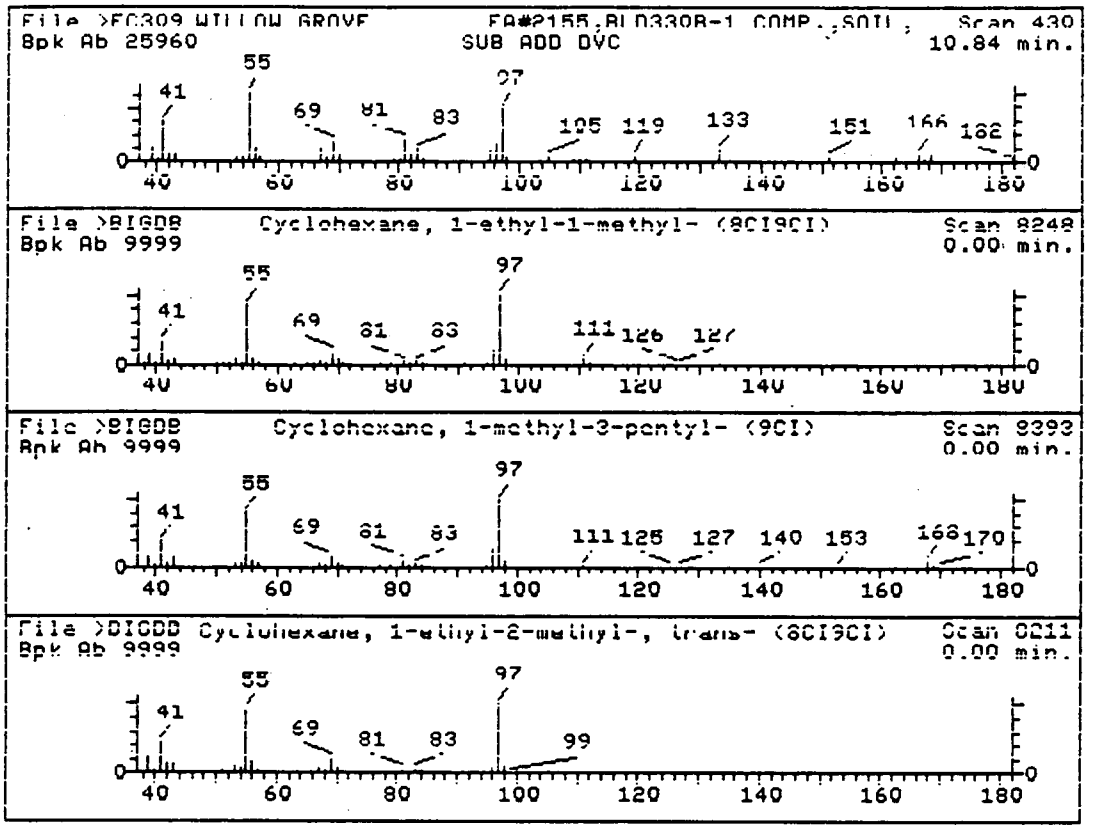
Area = 1336010. Tentative Concentration is 1600.00

1. Undecane, 2-methyl- (8CI9CI)	170	C12H26
2. Decane, 2,9-dimethyl- (8CI9CI)	170	C12H26
3. Nonane, 3,7-dimethyl- (8CI9CI)	156	C11H24
4. Undecane, 5,7-dimethyl- (8CI)	184	C13H28
5. Dodecane, 2-methyl- (8CI9CI)	184	C13H28
6. Undecane, 3,7-dimethyl- (8CI)	184	C13H28
7. Decane, 3,6-dimethyl- (8CI9CI)	170	C12H26

UNIDENTIFIED ALKANES

Sample file: >FC309 Spectrum #: 402
Search speed: 2 Tilting option: S No. of ion ranges searched: 59

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	79*	7045718	6095	"BIGDB	77	17	2	0	100	12	43	69		
2.	75	1002171	6094	"BIGDB	75	17	0	0	85	16	35	66		
3.	64*	17302328	6100	"BIGDB	51	35	1	0	58	24	28	43		
4.	58	17312833	6101	"BIGDB	66	36	2	0	87	18	25	23		
5.	58	1560970	6149	"BIGDB	65	36	2	0	90	20	25	23		
6.	58	17301290	6097	"BIGDB	65	38	1	0	66	17	25	23		
7.	55*	17312537	11148	"BIGDB	54	44	2	1	81	21	22	27		



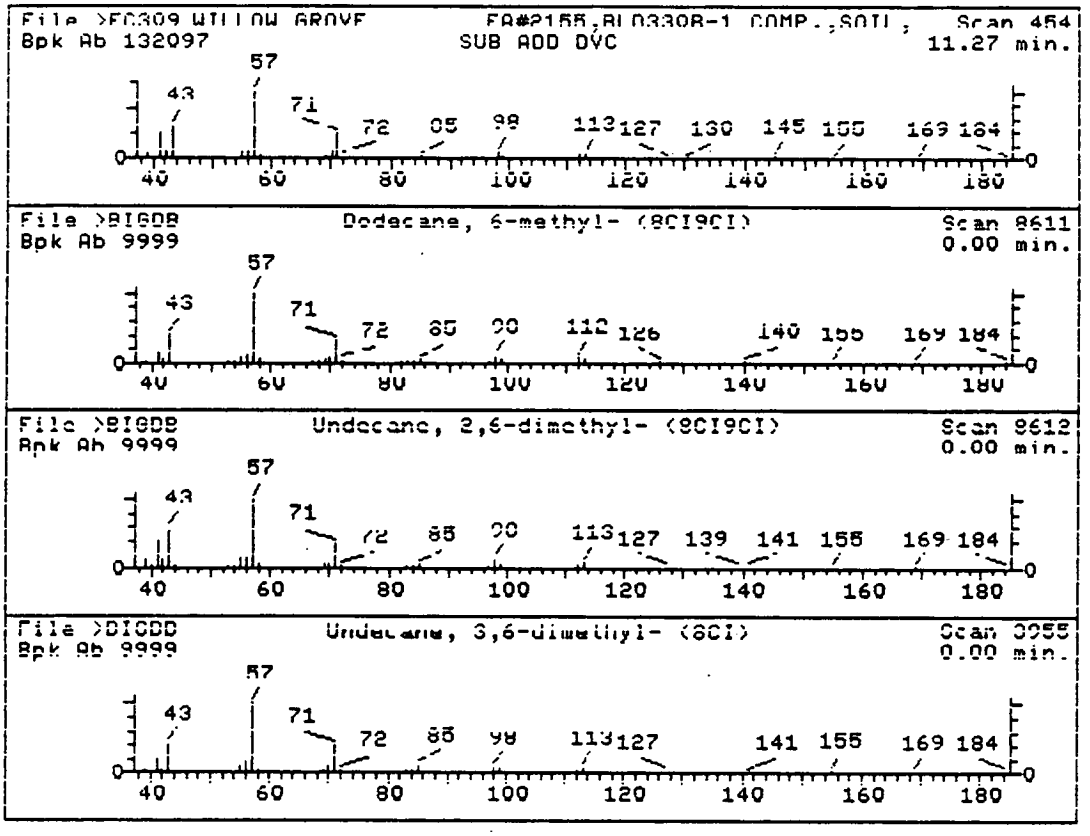
R t ntion time = 10.84

Area = 956091.0 Tentative Concentration is 1100.00

1.	Cyclohexane, 1-ethyl-1-methyl- (8CI9CI)	126	C9H18
2.	Cyclohexane, 1-methyl-3-pentyl- (9CI)	168	C12H24
3.	Cyclohexane, 1-ethyl-2-methyl-, trans- (8CI9CI)	126	C9H18
4.	Cyclohexane, 1-methyl-2-propyl- (8CI9CI)	140	C10H20
5.	Cyclohexane, 1-methyl-2-pentyl- (9CI)	168	C12H24
6.	Oxazole, 4,5-dimethyl- (8CI9CI)	97	C5H7NO
7.	1-Propene, 2-methyl-, trimer (9CI)	0	

Sample file: >FC309 Spectrum #: 430
Search peed: 2 Tilting option: S No. of ion ranges searched: 46

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	50*	4926903	8248	"BIGDB	38	53	0	0	77	39	19	41
2.	48*	54411028	8393	"BIGDB	35	62	0	0	77	33	20	32
3.	34	4923788	8211	"BIGDB	44	44	0	0	77	45	12	25
4.	32	4291796	8341	"BIGDB	49	40	1	0	80	39	10	18
5.	31*	54411017	8392	"BIGDB	31	66	1	0	77	39	10	17
6.	30*	20662833	8222	"BIGDB	26	83	3	0	77	33	12	13
7.	29*	7756947	8388	"BIGDB	41	42	3	0	248	43	8	17



Retention time = 11.27

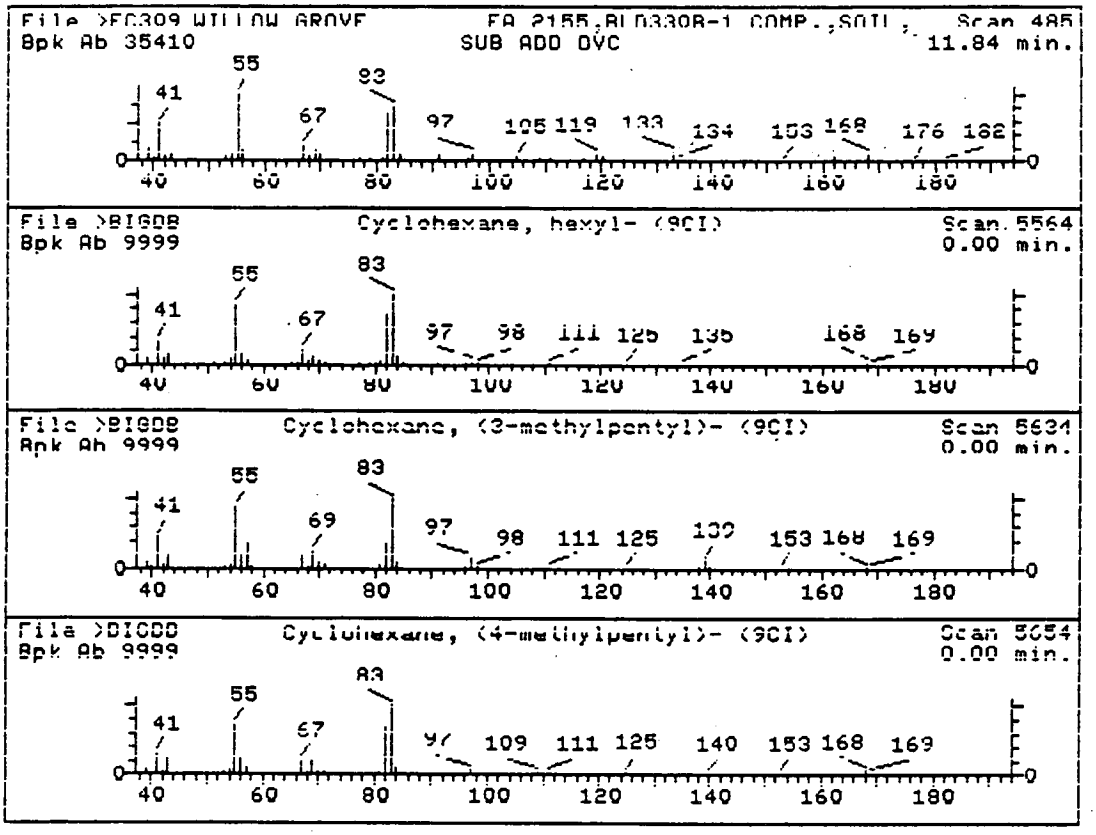
Area = 1223372. Tentative Concentration is 1400.00

1. Dodecane, 6-methyl- (8CI9CI)	184	C13H28
2. Undecane, 2,6-dimethyl- (8CI9CI)	184	C13H28
3. Undecane, 3,6-dimethyl- (8CI)	184	C13H28
4. Undecane, 2,5-dimethyl- (8CI9CI)	184	C13H28
5. Undecane, 3,5-dimethyl- (8CI)	184	C13H28
6. D cane, 2,6,8-trimethyl- (9CI)	184	C13H28
7. Heptane, 3-ethyl-5-methyl- (9CI)	142	C10H22

UNIDENTIFIED ALKANE

Sample file: >FC309 Spectrum #: 454
Search speed: 2 Tilting option: S No. of ion ranges searched: 63

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	97*	6044719	8611	"BIGDB	90	7	0	0	85	3	72			97
2.	89*	17301234	8612	"BIGDB	84	18	1	0	70	8	62			80
3.	87*	17301289	3955	"BIGDB	63	34	2	0	94	3	63			44
4.	86*	17301223	10849	"BIGDB	81	18	1	2	89	8	59			73
5.	78*	17312811	8754	"BIGDB	41	57	2	0	99	5	55			17
6.	76*	62108263	3928	"BIGDB	45	47	2	0	100	8	45			24
7.	67*	52896909	3958	"BIGDB	54	25	0	0	46	43	24			74



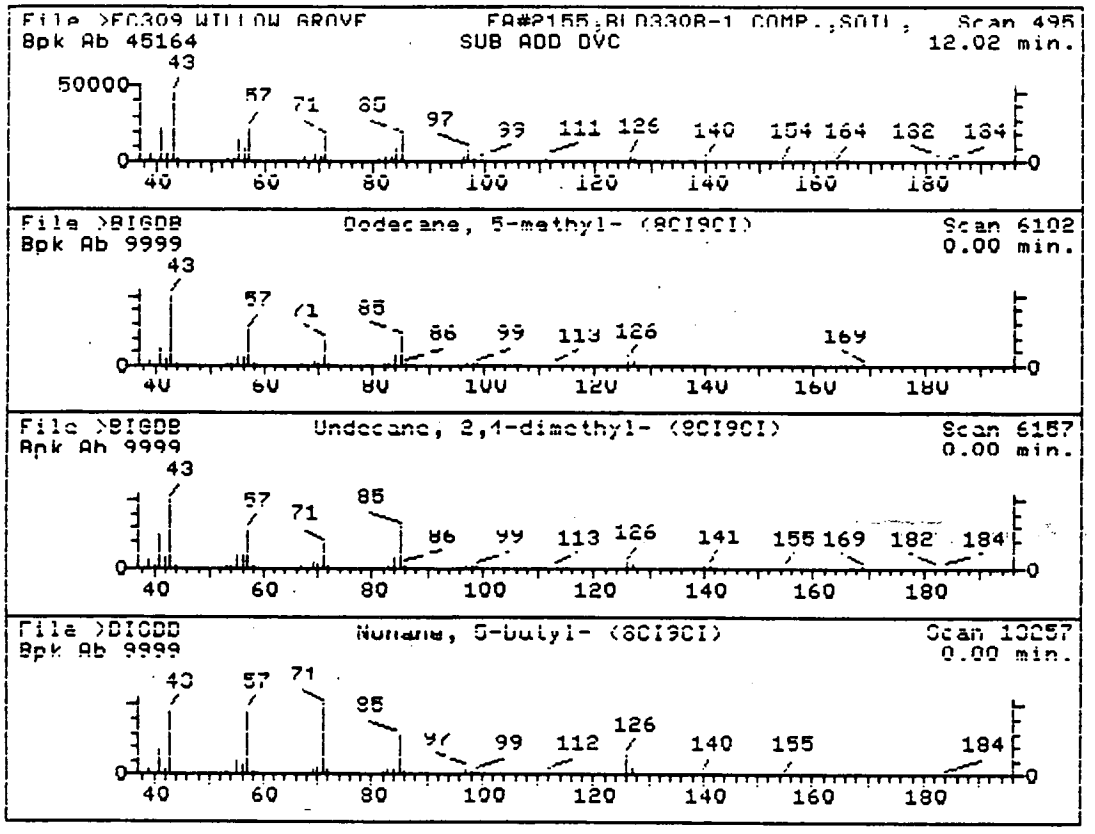
Retention time = 11.84

Area = 1071809. Tentative Concentration is 1300.00

1.	Cyclohexane, hexyl- (9CI)	168	C12H24
2.	Cyclohexane, (3-methylpentyl)- (9CI)	168	C12H24
3.	Cyclohexane, (4-methylpentyl)- (9CI)	168	C12H24
4.	Cyclohexane, (1-methylethyl)- (9CI)	126	C9H18
5.	Cyclohexane, (1,3-dimethylbutyl)- (9CI) UNKNOWN	168	C12H24
6.	Cyclohexane, 2-propenyl- (9CI)	124	C9H16
7.	Heptanenitrile (8CI9CI)	111	C7H13N

Sample file: >FC309 Spectrum #: 485
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	51*	4292755	5564	"BIGDB	45	50	2	0	81	25	22		23	
2.	51*	61142389	5634	"BIGDB	57	40	2	0	81	34	20		35	
3.	42*	61142209	5654	"BIGDB	43	54	3	0	81	25	17		13	
4.	40	696297	5414	"BIGDB	69	34	3	0	81	30	14		17	
5.	36*	61142196	5502	"BIGDB	30	82	3	0	74	28	14		13	
6.	35	2114423	5622	"BIGDB	50	49	2	0	81	30	14		12	
7.	31*	629083	5370	"BIGDB	24	78	2	0	68	32	12		14	



Retention time = 12.02

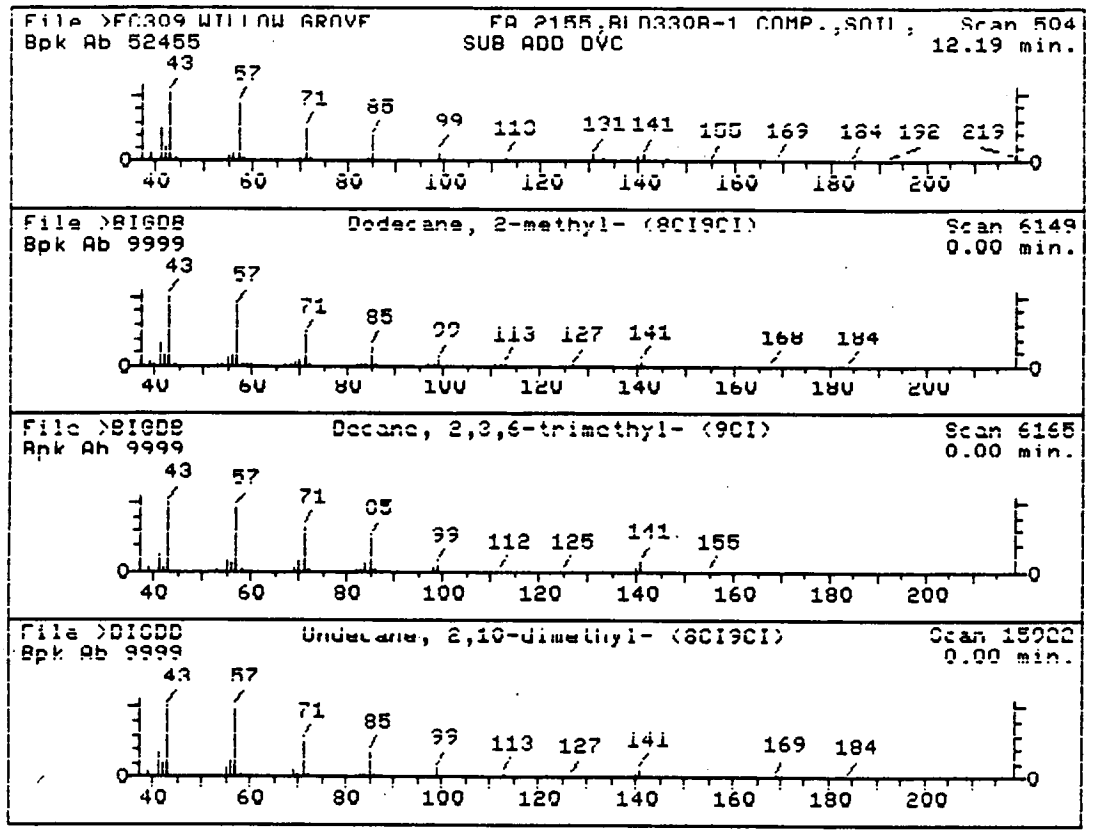
Area = 1178577. Tentative Concentration is 1400.00

1. Dodecane, 5-methyl- (8CI9CI)	184	C13H28
2. Undecane, 2,4-dimethyl- (8CI9CI)	184	C13H28
3. Nonane, 5-butyl- (8CI9CI)	184	C13H28
4. Undecane, 2,7-dimethyl- (8CI)	184	C13H28
5. Decane, 2,4,6-trimethyl- (9CI)	184	C13H28
6. Undecane, 3,4-dimethyl- (8CI)	184	C13H28
7. Octane, 4-methyl- (8CI9CI)	128	C9H20

UNIDENTIFIED ALKANE

Sample file: >FC309 Spectrum #: 495
Search speed: 2 Tilting option: S No. of ion ranges searched: 56

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	64	17453939	6102	"BIGDB	69	31	0	0	92	24	28		44	
2.	59*	17312800	6157	"BIGDB	53	55	1	0	56	21	27		37	
3.	45*	17312639	13257	"BIGDB	37	59	0	0	30	39	17		34	
4.	42	17301245	6096	"BIGDB	62	38	2	0	81	27	14		19	
5.	39	62108274	6107	"BIGDB	62	42	2	0	68	30	14		16	
6.	36	17312786	13258	"BIGDB	46	53	1	0	38	30	14		13	
7.	33	2216344	5921	"BIGDB	56	35	2	0	99	39	10		19	



Retention time = 12.19

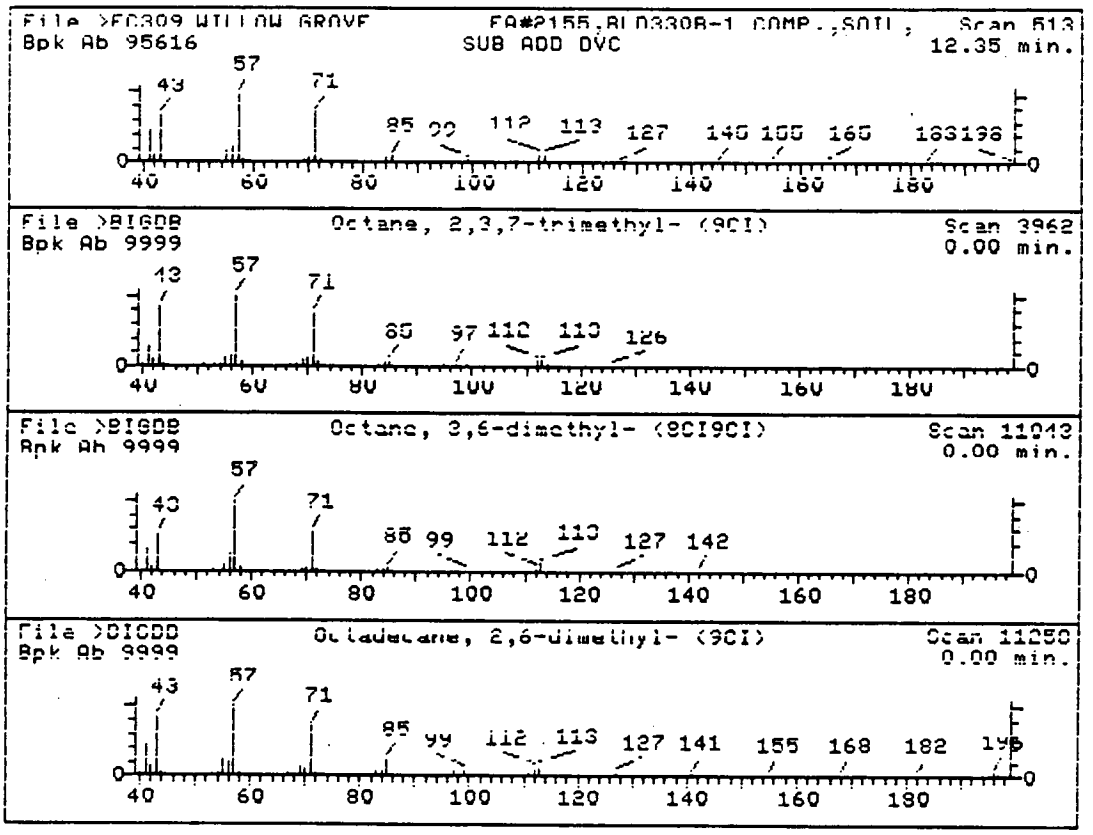
Area = 908399.0 Tentative Concentration is 1100.00

1.	Dodecane, 2-methyl- (8CI9CI)	184 C13H28
2.	D cane, 2,3,6-trimethyl- (9CI)	184 C13H28
3.	Undecane, 2,10-dimethyl- (8CI9CI)	184 C13H28
4.	Tridecane, 4,8-dimethyl- (9CI)	212 C15H32
5.	Decane, 5-propyl- (8CI)	184 C13H28
6.	Decane, 2,3,7-trimethyl- (9CI)	184 C13H28
7.	Undecane, 3-methyl- (8CI9CI)	170 C12H26

UNIDENTIFIED ALKANES

Sampl file: >FC309 Spectrum #: 504
Search speed: 2 Tilting option: S No. of ion ranges searched: 62

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	86	1560970	6149	"BIGDB	76	25	1	0	97	4	60			37
2.	83	62238124	6165	"BIGDB	76	32	2	0	70	5	57			26
3.	83*	17301278	15922	"BIGDB	58	51	0	0	58	12	51			71
4.	78	55030621	15993	"BIGDB	64	59	2	0	84	4	55			14
5.	60*	17312628	4003	"BIGDB	27	84	2	0	61	12	30			14
6.	60	62238135	6166	"BIGDB	65	44	2	1	75	11	30			12
7.	60	1002433	6148	"BIGDB	53	35	2	0	84	12	30			18



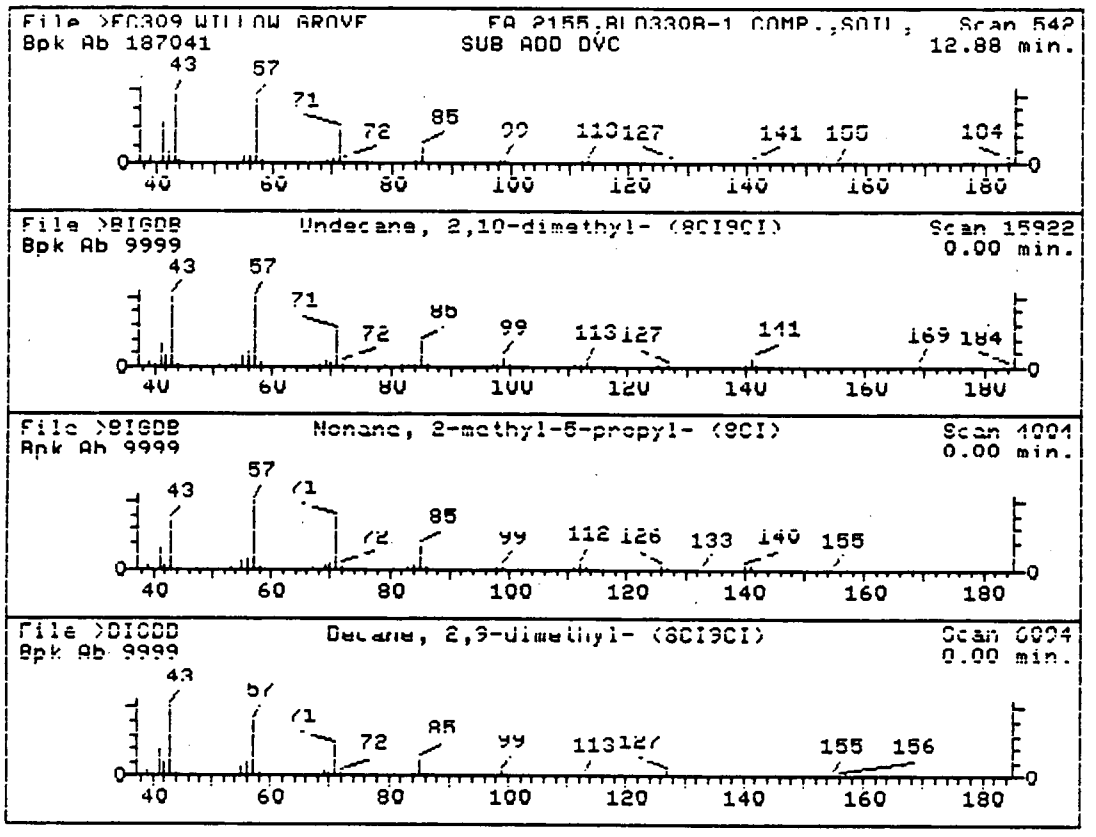
Retention time = 12.35

Area = 1835645. Tentative Concentration is 2200.00

1.	Octane, 2,3,7-trimethyl- (9CI)	156	C11H24
2.	Octane, 3,6-dimethyl- (8CI9CI)	142	C10H22
3.	Octadecane, 2,6-dimethyl- (9CI)	282	C20H42
4.	Octane, 2,3,6-trimethyl- (9CI)	156	C11H24
5.	Heptane, 5-ethyl-2-methyl- (8CI9CI)	142	C10H22
6.	Heptane, 3-ethyl-5-methyl- (9CI)	142	C10H22
7.	Nonane, 2,3-dimethyl- (8CI9CI)	156	C11H24

Sample file: >FC309 Spectrum #: 513
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	86	62016346	3962	"BIGDB	69	24	1	0	79	4	60			34
2.	70	15869940	11043	"BIGDB	51	38	1	0	87	8	42			19
3.	70	75163972	11258	"BIGDB	75	64	3	0	83	6	42			13
4.	70	62016335	3961	"BIGDB	50	42	2	0	87	6	42			16
5.	60	13475780	3954	"BIGDB	61	40	2	0	68	12	30			17
6.	60	52896909	3958	"BIGDB	53	41	2	0	78	13	30			17
7.	58*	2884062	10835	"BIGDB	57	44	3	0	73	17	25			22



Retention time = 12.88

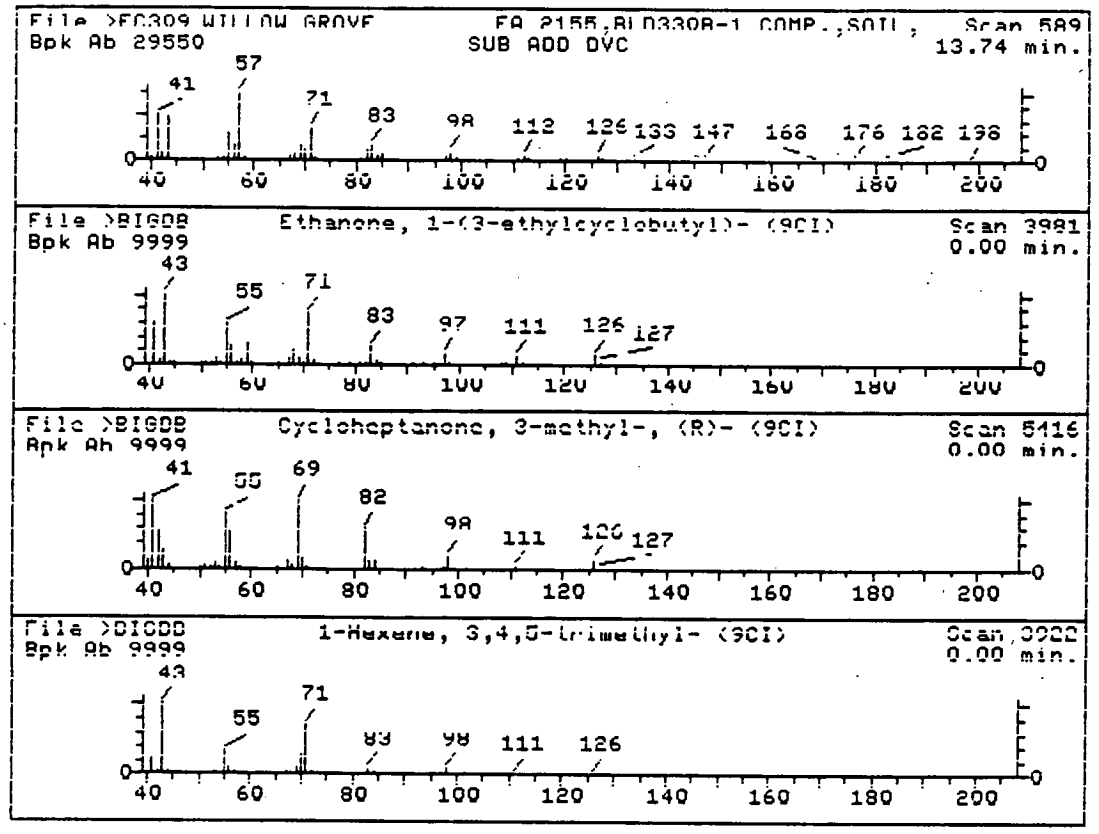
Area = 3565617. Tentative Concentration is 4200.00

1. Undecane, 2,10-dimethyl- (8CI9CI)	184	C13H28
2. Nonane, 2-methyl-5-propyl- (8CI)	184	C13H28
3. Decane, 2,9-dimethyl- (8CI9CI)	170	C12H26
4. Decane, 6-ethyl-2-methyl- (9CI)	184	C13H28
5. Tridecane (8CI9CI)	184	C13H28
6. Dodecane (8CI9CI)	170	C12H26
7. Octacosane (8CI9CI)	394	C28H58

UNIDENTIFIED ALKANE

Sample file: >FC309 Spectrum #: 542
Search speed: 2 Tilting option: S No. of ion ranges searched: 55

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	79*	17301278	15922	"BIGDB	56	53	2	0	67	6	48		33	
2.	78	31081171	4004	"BIGDB	58	45	2	0	63	4	55		14	
3.	76	1002171	6094	"BIGDB	65	27	2	0	78	7	45		23	
4.	76	62108218	6163	"BIGDB	63	36	2	0	92	9	45		22	
5.	71*	629505	6250	"BIGDB	65	31	0	0	49	41	24		78	
6.	70	112403	6229	"BIGDB	73	28	2	1	74	9	42		19	
7.	70	630024	6093	"BIGDB	79	58	2	2	80	7	42		14	



Retention time = 13.74

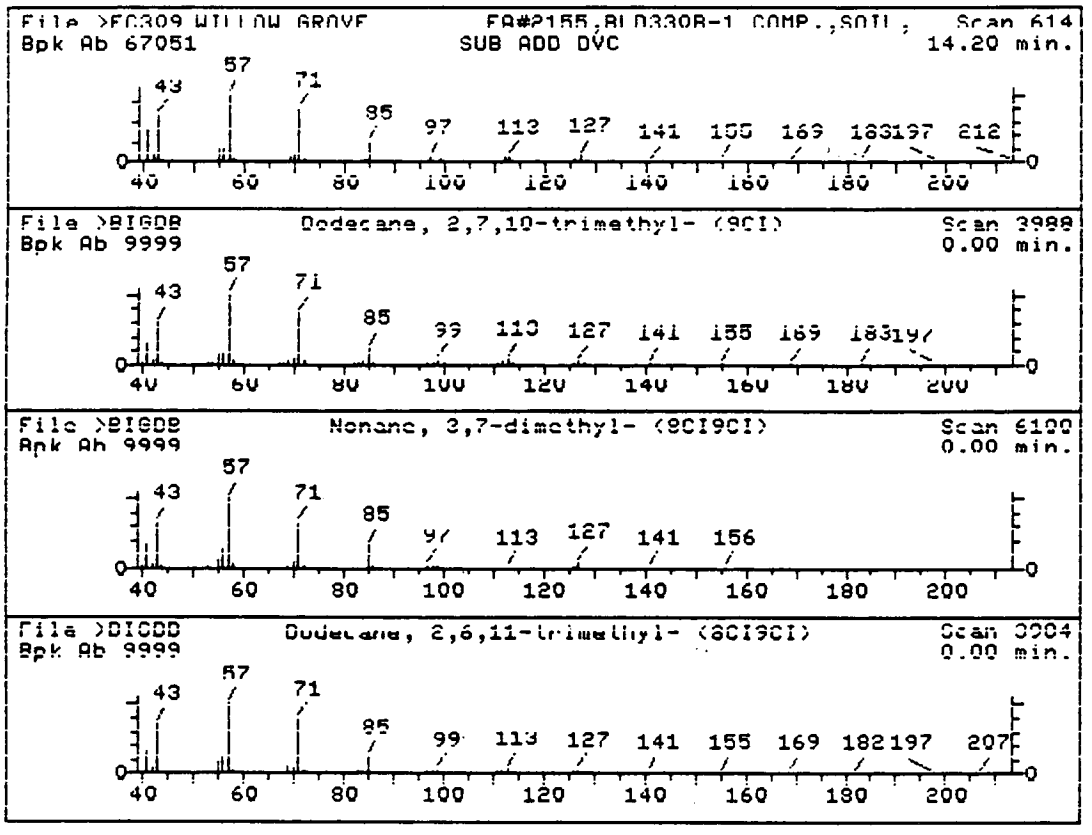
Area = 871257.0 Tentative Concentration is 5000.00

1. Ethanone, 1-(3-ethylcyclobutyl)- (9CI)	126	C8H14O
2. Cycloheptanone, 3-methyl-, (R)- (9CI)	126	C8H14O
3. 1-H xene, 3,4,5-trimethyl- (9CI)	126	C9H18
4. Dodecane, 2,6,11-trimethyl- (8CI9CI)	212	C15H32
5. Dodecane, 4,6-dimethyl- (9CI)	198	C14H30
6. Undecane, 4,6-dimethyl- (8CI)	184	C13H28
7. Octadecane, 1-(ethenyloxy)- (9CI)	296	C20H40O

UNKNOWN

Sample file: >FC309 Spectrum #: 589
Search speed: 2 Tilting option: S No. of ion ranges searched: 68

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	54*	56335718	3981	"BIGDB	57	48	2	0	63	30	24			34
2.	41*	13609580	5416	"BIGDB	39	46	0	-3	20	42	14			30
3.	40*	56728100	3922	"BIGDB	37	48	0	0	58	50	12			42
4.	32	31295564	3984	"BIGDB	42	46	0	0	44	45	12			23
5.	30*	61141728	3960	"BIGDB	52	58	2	0	54	50	10			27
6.	30*	17312822	3957	"BIGDB	46	52	2	0	73	50	10			21
7.	25	930029	6049	"BIGDB	71	74	2	0	54	50	7			17



Retention time = 14.20

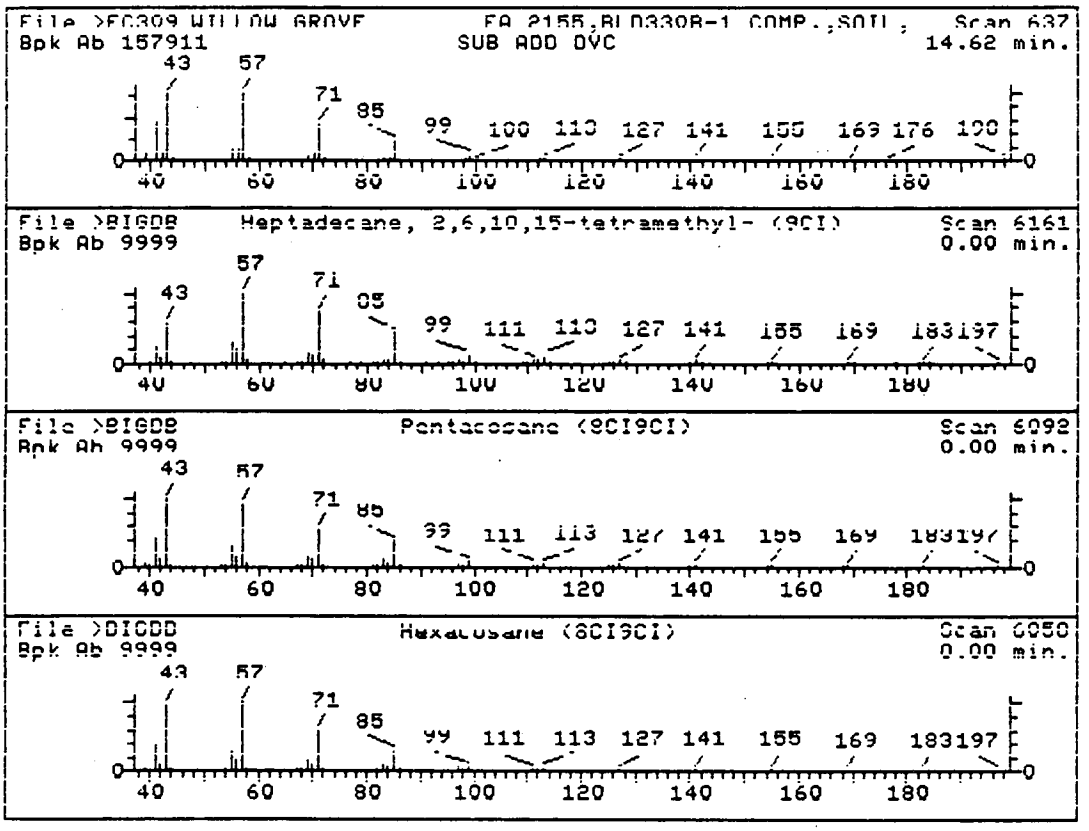
Area = 770373.0 Tentative Concentration is 4500.00

1.	Dodecane, 2,7,10-trimethyl- (9CI)	212	C15H32
2.	Nonane, 3,7-dimethyl- (8CI9CI)	156	C11H24
3.	Dodecane, 2,6,11-trimethyl- (8CI9CI)	212	C15H32
4.	Decane, 5-propyl- (8CI)	184	C13H28
5.	Dodecane, 2,6,10-trimethyl- (8CI9CI)	212	C15H32
6.	Dodecane, 4,6-dimethyl- (9CI)	198	C14H30
7.	Octadecane, 2,6-dimethyl- (9CI)	282	C20H42

UNIDENTIFIED ALKANE

Sample file: >FC309 Spectrum #: 614
Search speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	89	74645980	3988	"BIGDB	103	6	1	-2	81	0	66			63
2.	89*	17302328	6100	"BIGDB	68	18	1	0	90	5	66			77
3.	87	31295564	3984	"BIGDB	85	21	1	0	93	2	63			49
4.	87*	17312628	4003	"BIGDB	66	45	2	0	80	4	63			45
5.	84*	3891983	4036	"BIGDB	90	34	2	3	86	6	55			60
6.	83*	61141728	3960	"BIGDB	68	42	1	2	72	10	54			57
7.	78	75163972	11258	"BIGDB	60	79	2	0	83	4	55			12



R tention time = 14.62

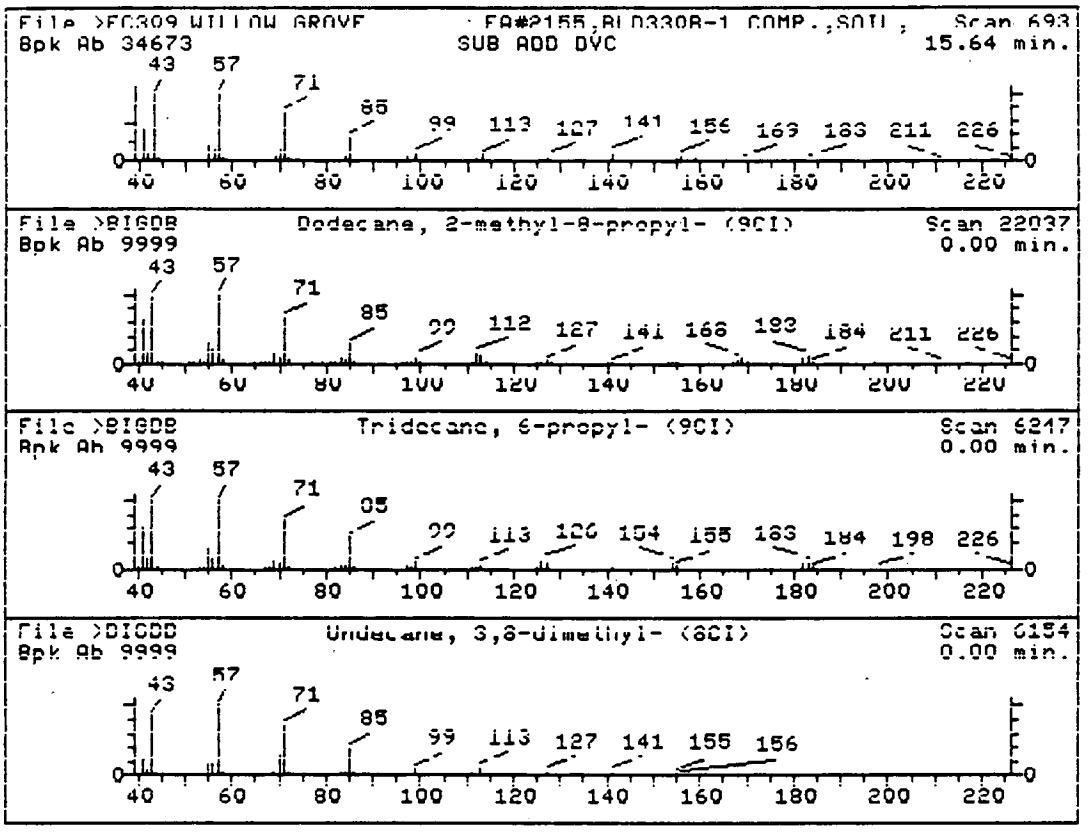
Area = 2452247. Tentative Concentration is 14000.00

1. Heptadecane, 2,6,10,15-tetramethyl- (9CI)	296	C21H44
2. Pentacosane (8CI9CI)	352	C25H52
3. H xacosane (8CI9CI)	366	C26H54
4. Nonacosane (8CI9CI)	408	C29H60
5. Hexatriacontane (8CI9CI)	506	C36H74
6. Tritetracontane (8CI9CI)	604	C43H88
7. Hexadecane (8CI9CI)	226	C16H34

UNIDENTIFIED ALKANE

Sample file: >FC309 Spectrum #: 637
Search speed: 2 Tilting option: S No. of ion ranges searched: 58

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	78	54833486	6161	"BIGDB	62	71	2	0	66	2	55		13	
2.	78	629992	6092	"BIGDB	65	75	2	0	75	5	55		14	
3.	78	630013	6058	"BIGDB	62	78	2	0	89	5	55		13	
4.	78	630035	8905	"BIGDB	62	83	2	0	77	5	55		13	
5.	78	630068	6193	"BIGDB	62	100	2	0	68	4	55		13	
6.	78	7098217	6150	"BIGDB	62	106	2	0	69	5	55		13	
7.	78	544763	6146	"BIGDB	81	39	2	2	90	5	55		16	



R tention time = 15.64

Area = 758780.0 Tentative Concentration is 4400.00

1.	Dodecane, 2-methyl-8-propyl- (9CI)	226	C16H34
2.	Tridecane, 6-propyl- (9CI)	226	C16H34
3.	Undecane, 3,8-dimethyl- (8CI)	184	C13H28
4.	Pentadecane (8CI9CI)	212	C15H32
5.	Tridecane, 5-propyl- (9CI)	226	C16H34
6.	Docosane (8CI9CI)	310	C22H46
7.	Hexatriacontane (8CI9CI)	506	C36H74

UNIDENTIFIED ALKANE

Sample file: >FC309 Spectrum #: 693
Search speed: 2 Tilting option: S No. of ion ranges searched: 75

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	73*	55045073	22037	"BIGDB	79	49	2	0	89	21	32	60
2.	68*	55045108	6247	"BIGDB	72	57	2	0	74	21	30	54
3.	67	17301303	6154	"BIGDB	74	34	2	0	92	15	34	24
4.	63	629629	6265	"BIGDB	92	28	2	0	81	19	30	30
5.	63*	55045119	10998	"BIGDB	57	56	2	0	100	19	30	34
6.	60	629970	6221	"BIGDB	70	77	2	0	61	13	30	16
7.	60	630068	6193	"BIGDB	70	92	2	0	83	13	30	16

Peak # in PBM file	R tention Time	Peak Area	10% of Nearest ISTD Area
1	6.44	855040	73162
2	6.57	813198	73162
3	7.17	2373204	73162
4	8.26	812328	73162
5	8.39	1794042	73162
6	9.63	825313	400384
7	10.07	818818	400384
8	10.14	830093	400384
9	10.32	1336010	400384
10	10.84	956091	400384
11	11.27	1223372	400384
12	11.84	1071809	400384
13	12.02	1178577	400384
14	12.19	908399	400384
15	12.35	1835645	400384
16	12.88	3565617	400384
17	13.74	871257	82096
18	14.20	770373	82096
19	14.62	2452247	82096
20	15.64	758780	82096

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#2157,BLD3301B-2

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/05/89
Date Analyzed: 5/31/89 1:41
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup _ Yes ✓No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction ✓Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	1200.	U
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	1200.	U
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	1200.	U
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	1200.	U
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	180.	J
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	1200.	U
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	1200.	U
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	5800.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	5800.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	5800.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	1200.	U
51-28-5	2,4-Dinitrophenol	5800.	U
100-02-7	4-Nitrophenol	5800.	U
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	1200.	U
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	5800.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	5800.	U
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	1200.	U
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2300.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1200.	U
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

BLD330 B-2 comp

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: _____ Case No.: WillowGrove SAS No.: _____ SDG No.: _____

Matrix: (soil/water) Soil Lab Sample ID: EA#2157

Sample wt/~~vol.~~ 10.21 (g/~~ml~~) _____ Lab File ID: 2FC310

Level: (low/~~med~~) Lo Date Received: 5/4/89

% Moisture: not dec. 16.0 dec. _____ Date Extracted: 5/5/89

Extraction: (~~SepF~~/Cont/~~Sonc~~) _____ Date Analyzed: 5/31/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: _____

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) ~~ug/kg~~

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	507459	2,3-Dichloro-2-methyl Butane	4.17	610 J	
2.	108941	Cyclohexanone	5.38	690 J	
3.	—	Unknown	5.62	650 J	
4.	57103	Hexadecanoic Acid	22.91	870 J	
5.	—	Unknown	29.63	3700 J	
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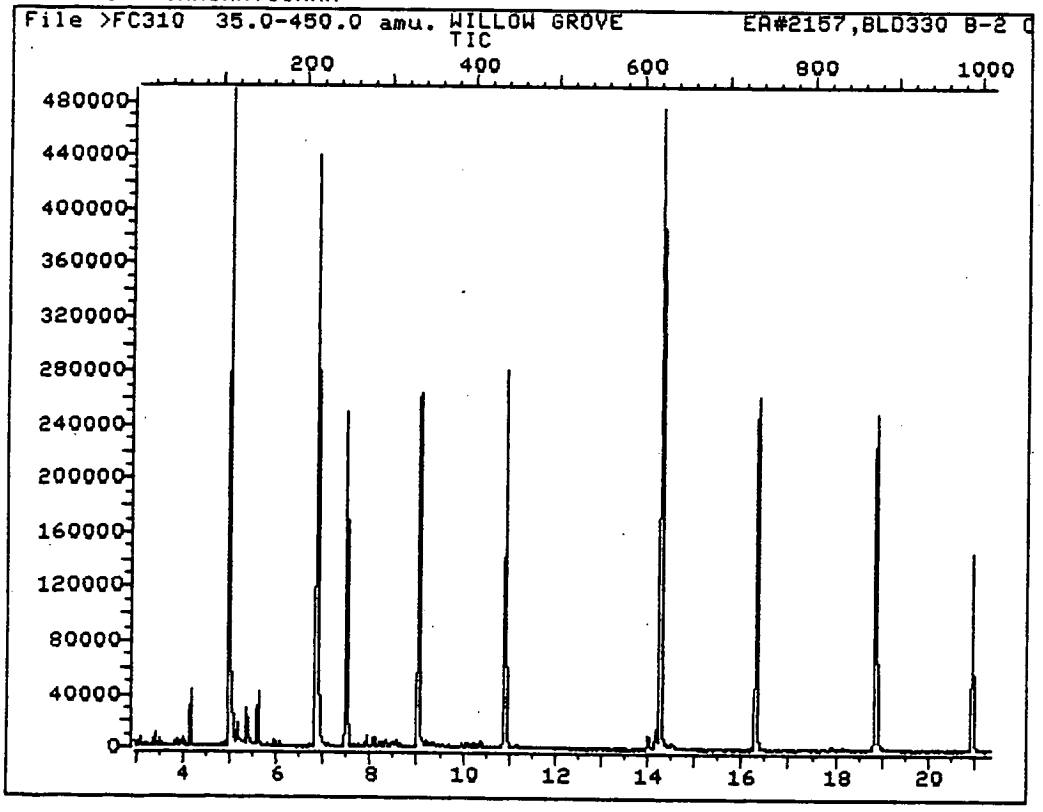
FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



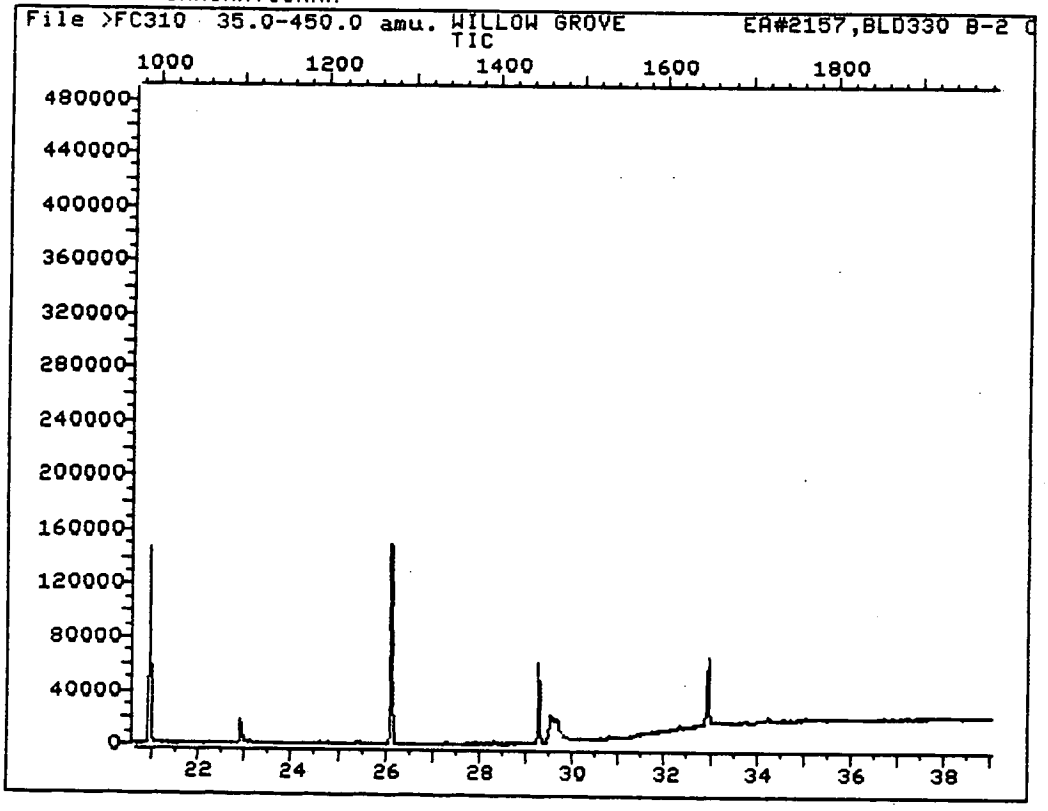
Data File: >FC310::D4 Quant Output File: ^FC310::QT
Name: WILLOW GROVE
Misc: EA#2157,BLD330 B-2 COMP.,SOIL,10.21g,1mL BTL# 4

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 02:23
Injected at: 890531 01:41

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC310::D4 Quant Output File: ^FC310::QT
Name: WILLOW GROVE
Misc: EA#2157,BLD330 B-2 COMP.,SOIL,10.21g,1mL BTL# 4

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Op rator ID: UNCLE
Quant Time: 890531 02:23
Injected at: 890531 01:41

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Tim : 890531 02:23
Output File: ^FC310::QT Injected at: 890531 01:41
Data File: >FC310::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2157,BLD330 B-2 COMP.,SOIL,10.21g,1mL BTL# 4

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.51	152.0	96471	40.00	NG	98
2)	2-Fluorophenol	4.98	112.0	297684	92.72	NG 46%	82
3)	Phenol-d5	6.85	99.0	433111	108.06	NG 54%	92
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	7.11	128.0	602	~~.18~~	NG	94
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.92	136.0	365656	40.00	NG	87
17)	Nitrobenzene-d5	9.05	82.0	214279	69.44	NG 69%	91
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	10.37	122.0	1701	1.53	NG	98
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	16.31	164.0	159645	40.00	NG	91
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	14.28	172.0	437804	73.38	NG 73%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	16.33	163.0	54405	~~8.30~~	NG	52
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

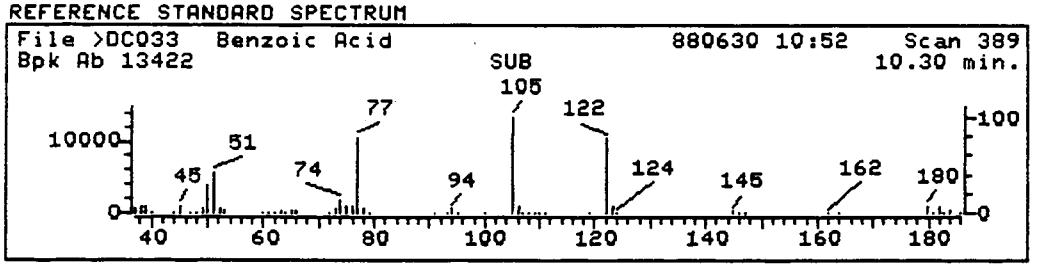
QUANT REPORT
page 2

Output File:^FC310:: Data File:>FC310::D4

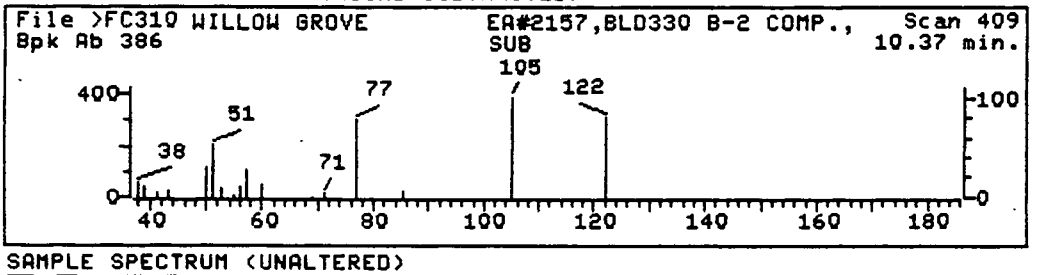
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Di thylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.95	188.0	156877	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.85	329.9	107870	138.05	NG 69%	96
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	23.13	149.0	1386	~~.19~~	NG	99
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	29.28	240.0	53534	40.00	NG	98
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	26.12	244.0	181337	89.39	NG 89%	84
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	29.56	149.0	3370	1.46	NG	97
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.96	264.0	56860	40.00	NG	93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

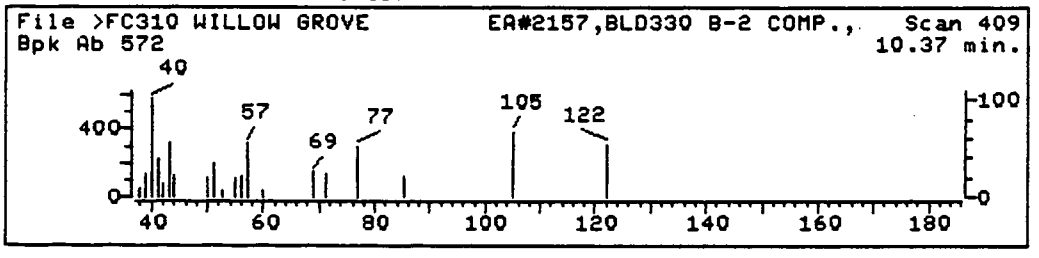
REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)

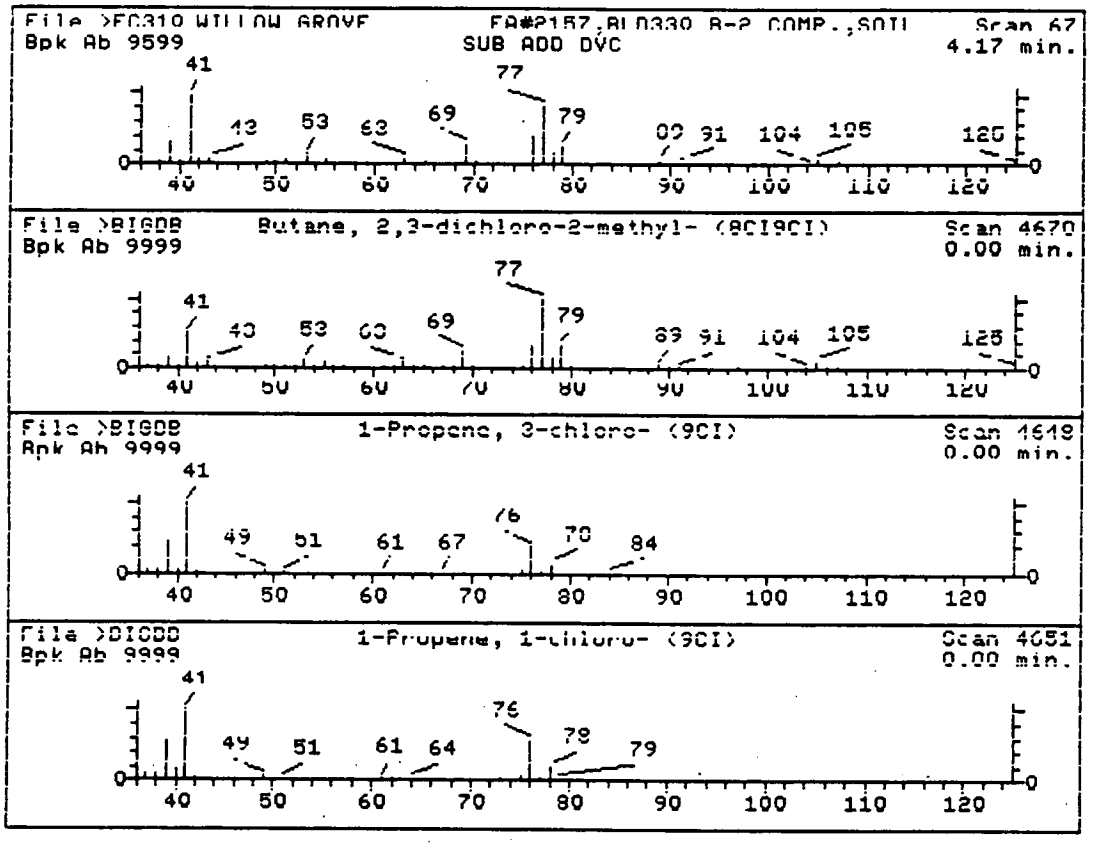


SAMPLE SPECTRUM (UNALTERED)



Data File: >FC310::D4 Quant Output File: ^FC310::QT
Name: WILLOW GROVE
Misc: EA#2157,BLD330 B-2 COMP.,SOIL,10.21g,1mL BTL# 4
Quant Time: 890531 02:23 Quant ID File: IDFCLP::BD
Injected at: 890531 01:41 Last Calibration: 890530 23:48

Compound No: 22
Compound Name: Benzoic Acid
Scan Number: 409
Retention Time: 10.37 min.
Quant Ion: 122.0
Area: 1701
Concentration: 1.53 NG
q-value: 98



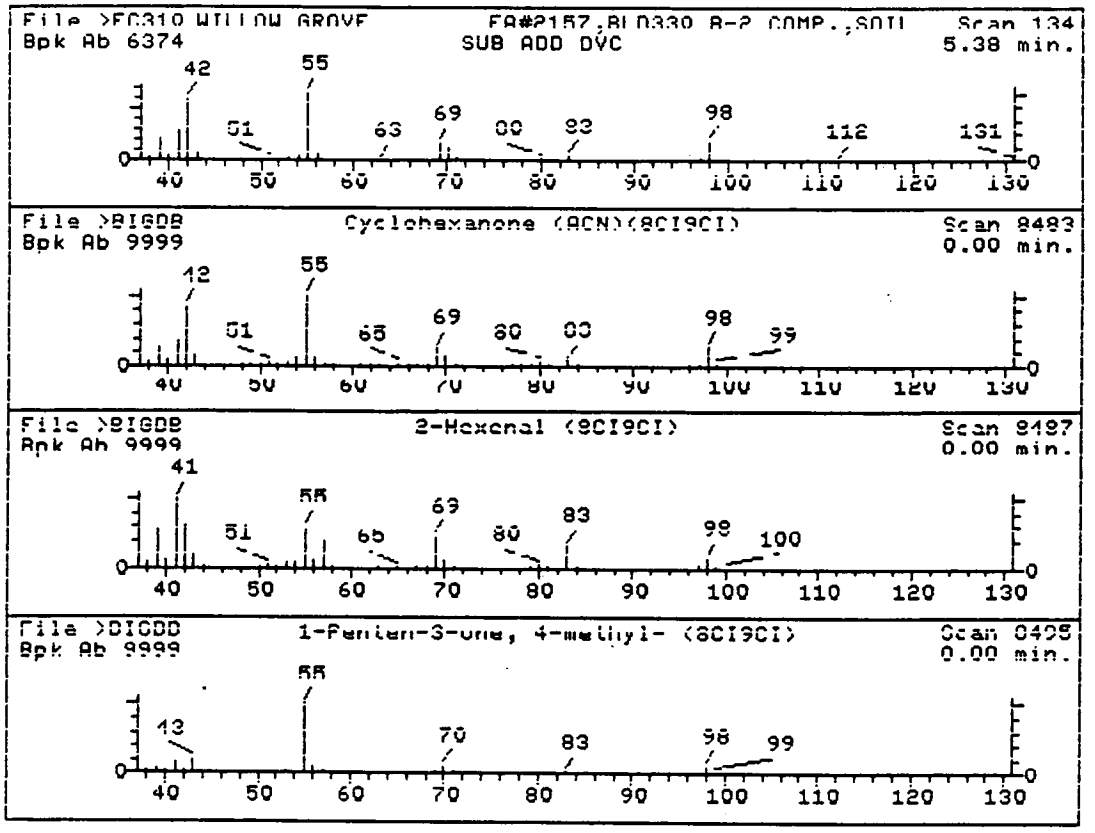
Retention time = 4.17

Area = 78171.00 Tentative Concentration is 610.00

1. Butane, 2,3-dichloro-2-methyl- (8CI9CI) 140 C5H10Cl2
2. 1-Propene, 3-chloro- (9CI) 76 C3H5Cl
3. 1-Propene, 1-chloro- (9CI) 76 C3H5Cl

Sample file: >FC310 Spectrum #: 67
Search speed: 2 Tilting option: S No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	74	507459	4670	"BIGDB	66	30	0	0	72	14	39		44	
2.	11*	107051	4648	"BIGDB	29	58	2	0	72	65	2		14	
3.	11*	590216	4651	"BIGDB	27	66	2	0	64	63	2		14	



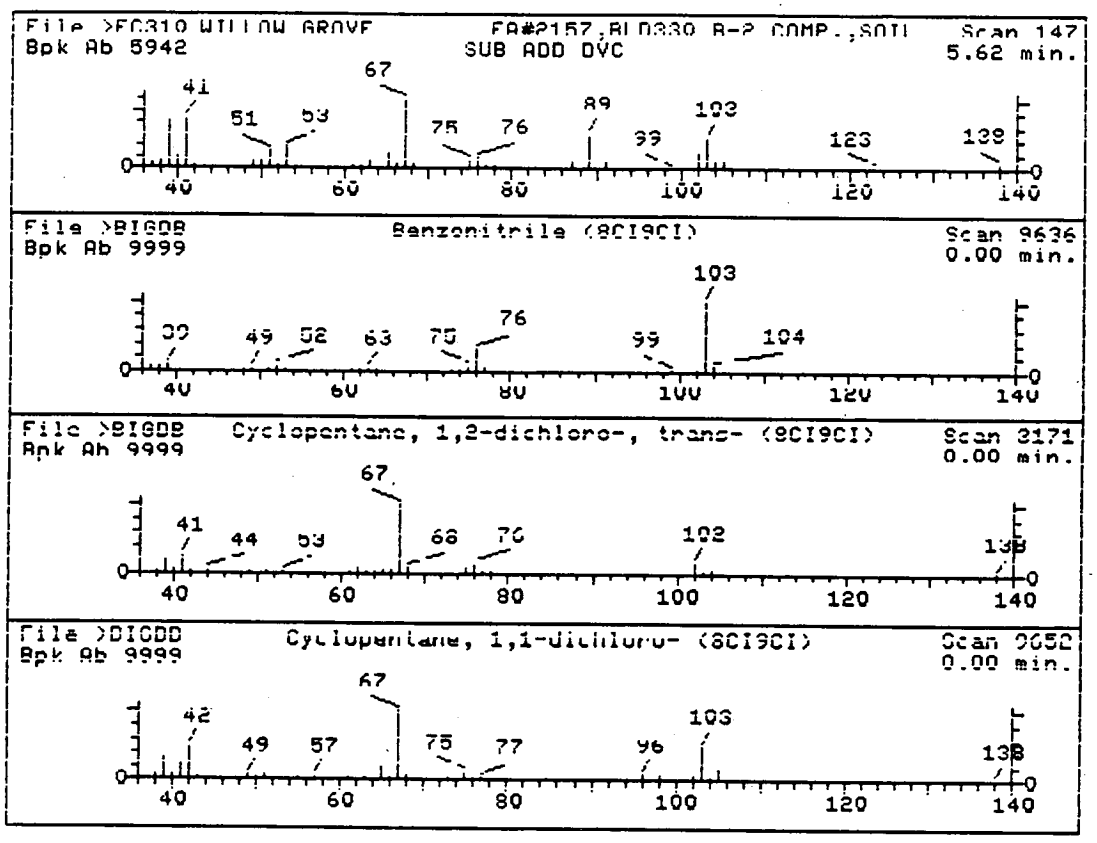
Ret ntion time = 5.38

Area = 88720.00 Tentative Concentration is 690.00

1.	Cyclohexanone (ACN)(8CI9CI)	98	C6H10O
2.	2-Hexenal (8CI9CI)	98	C6H10O
3.	1-Penten-3-one, 4-methyl- (8CI9CI)	98	C6H10O
4.	2-Pentanone, 3-methylene- (8CI9CI)	98	C6H10O
5.	Methanamine, N-pentylidene- (9CI)	99	C6H13N
6.	Cyclopropane, ethyl- (8CI9CI)	70	C5H10
7.	Cyclopentanone, 2-methyl- (8CI9CI)	98	C6H10O

Sample file: >FC310 Spectrum #: 134
Search speed: 2 Tilting option: S No. of ion ranges searched: 48

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C I	R IV
1.	87*	108941	8483	"BIGDB	58	44	1	0	74	1	63	49
2.	78*	505577	8487	"BIGDB	26	79	3	0	150	4	55	13
3.	27*	1606479	8495	"BIGDB	27	50	1	0	100	45	8	15
4.	26*	4359777	8504	"BIGDB	29	60	2	0	101	44	8	14
5.	25*	10599754	3487	"BIGDB	33	42	3	0	91	50	7	14
6.	25*	1191964	3479	"BIGDB	37	49	1	0	65	47	7	19
7.	25*	1120725	8545	"BIGDB	41	56	2	0	54	50	7	17



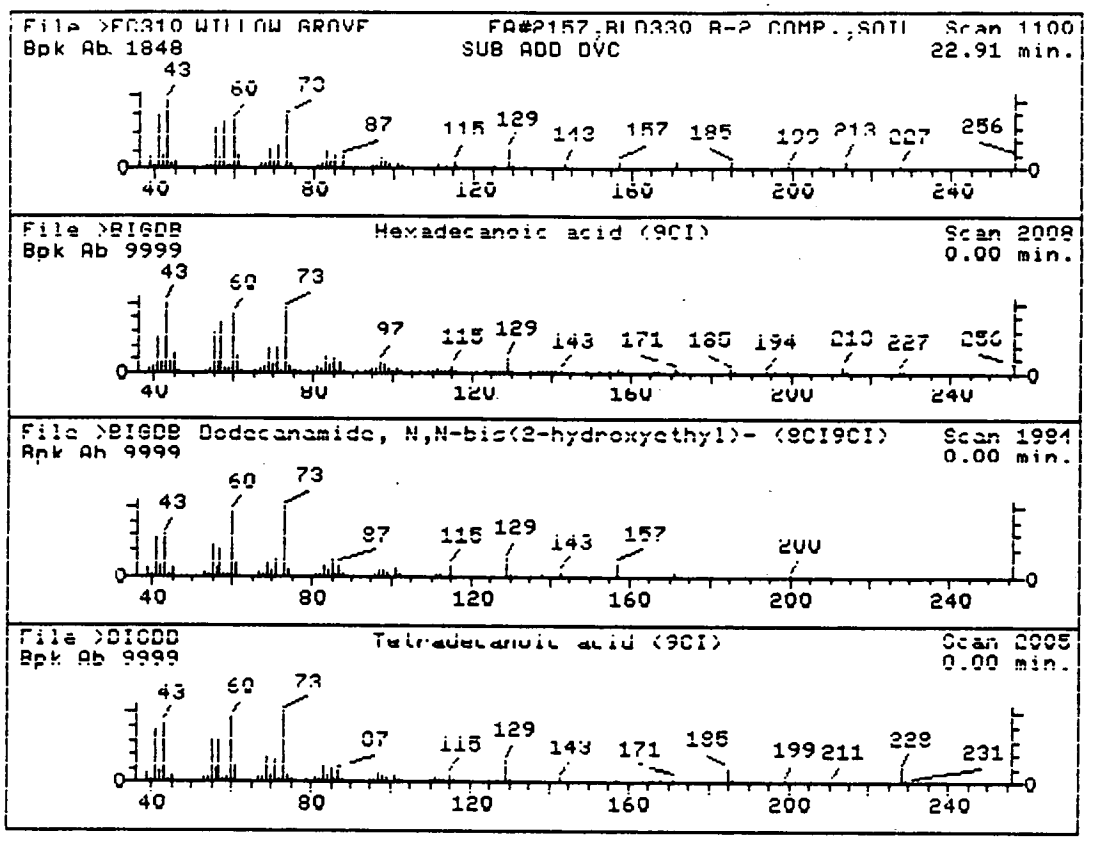
Retention time = 5.62

Area = 83770.00 Tentative Concentration is 650.00

1. Benzonitrile (8CI9CI)	103	C7H5N
2. Cyclopentane, 1,2-dichloro-, trans- (8CI9CI)	138	C5H8Cl2
3. Cyclopentane, 1,1-dichloro- (8CI9CI)	138	C5H8Cl2
4. Cyclopentane, 1,3-dichloro-, cis- (8CI9CI)	138	C5H8Cl2
5. Cyclopentane, 1,2-dichloro-, cis- (8CI9CI)	138	C5H8Cl2

Sample file: >FC310 Spectrum #: 147
Search sp ed: 2 Tilting option: S No. of ion ranges searched: 45

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	65*	100470	9636	"BIGDB	50	37	0	2	52	35	24		55	
2.	40*	14376819	3171	"BIGDB	41	46	0	0	67	50	12		49	
3.	33*	31038069	9652	"BIGDB	58	42	3	2	100	39	10		19	
4.	15*	26688517	9568	"BIGDB	44	54	0	0	59	65	3		49	
5.	15*	31025657	2157	"BIGDB	30	53	2	0	99	59	3		15	



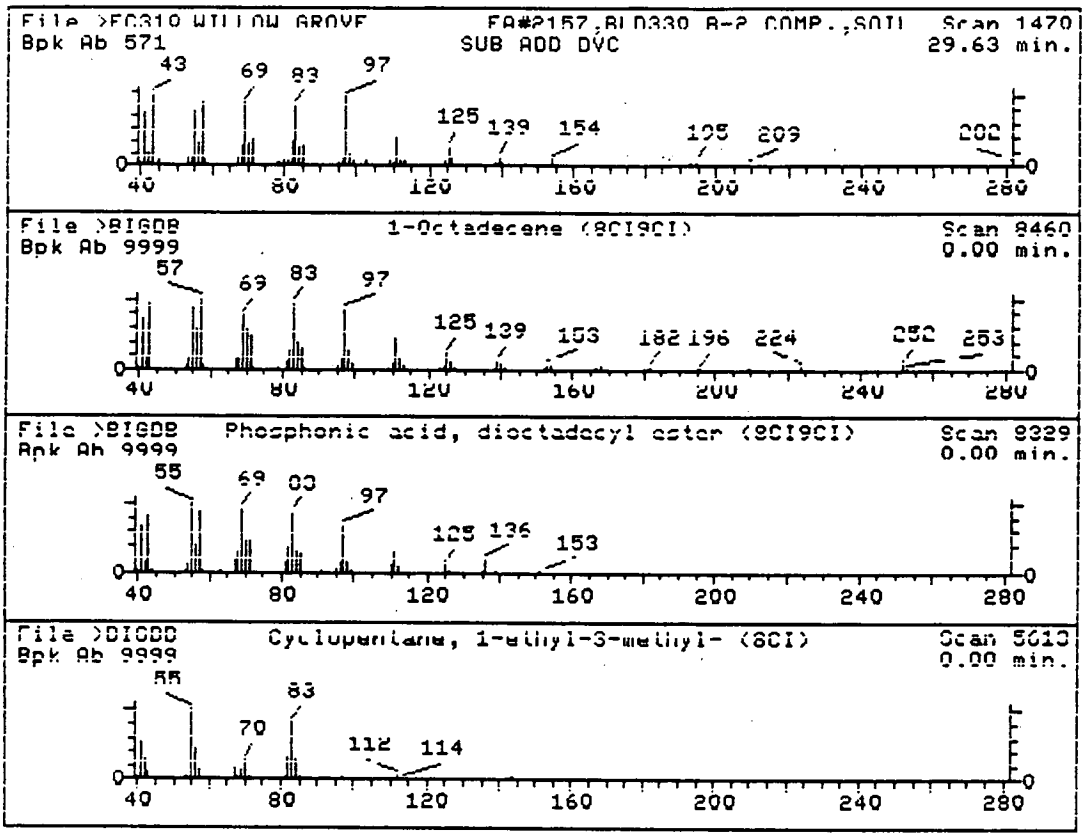
Retention time = 22.91

Area = 74168.00 Tentative Concentration is 870.00

1.	Hexadecanoic acid (9CI)	256	C16H32O2
2.	Dodecanamide, N,N-bis(2-hydroxyethyl)- (8CI9CI)	287	C16H33NO3
3.	Tetradecanoic acid (9CI)	228	C14H28O2
4.	Dodecanoic acid, silver(1+) salt (9CI)	0	
5.	Dodecanoic acid (9CI)	200	C12H24O2
6.	Pentadecanoic acid (8CI9CI)	242	C15H30O2
7.	Glycine, N-methyl-N-(1-oxododecyl)- (9CI)	271	C15H29NO3

Sample file: >FC310 Spectrum #: 1100
Search speed: 2 Tilting option: S No. of ion ranges searched: 47

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	85*	57103	2008	"BIGDB	87	64	1	0	82	28	43		86	
2.	47	120401	1984	"BIGDB	78	75	0	0	66	46	13		57	
3.	40	544638	2005	"BIGDB	92	54	2	0	76	39	14		27	
4.	38	18268456	1998	"BIGDB	82	93	3	0	76	28	14		15	
5.	34	143077	1997	"BIGDB	63	75	1	0	67	39	14		21	
6.	30	1002842	2007	"BIGDB	62	88	2	0	76	32	12		13	
7.	30	97789	1972	"BIGDB	51	99	0	0	76	48	10		22	



Retention time = 29.63

Area = 134295.0 Tentative Concentration is 3700.00

1. 1-Octadecene (8CI9CI)	252	C18H36
2. Phosphonic acid, dioctadecyl ester (8CI9CI)	586	C36H7503P
3. Cyclopentane, 1-ethyl-3-methyl- (8CI)	112	C8H16
4. Cyclopentaneacetic acid, ethenyl ester (9CI)	154	C9H1402
5. Cyclohexane, 1,2-dimethyl-3-pentyl-4-propyl- (9CI)	224	C16H32
6. 1-Octadecanol (8CI9CI)	270	C18H380
7. Isoheptadecanol (9CI)	256	C17H360

Unknown

Sample file: >FC310 Spectrum #: 1470
Search speed: 2 Tilting option: S No. of ion ranges searched: 56

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	76	112889	8460	"BIGDB	96	76	3	0	78	9	45		21	
2.	71	19047859	8329	"BIGDB	122	78	3	-3	62	13	38		36	
3.	60*	3726474	5613	"BIGDB	69	38	1	-3	59	34	22		45	
4.	53*	45955666	10643	"BIGDB	50	45	2	1	71	22	22		25	
5.	52	62376174	8409	"BIGDB	71	71	3	0	97	17	20		12	
6.	31	112925	8461	"BIGDB	77	93	3	0	78	33	12		14	
7.	31	57289073	8454	"BIGDB	76	98	3	0	84	33	12		14	

LIBRARY SEARCH SUMMARY

MS Data File:>FC310::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 5/31/89 1:41
Misc:EA#2157,BLD330 B-2 COMP.,SOIL,10.21g,1mL BTL# 4

Th following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	4.17	78171	59801
2	5.38	88720	59801
3	5.62	83770	59801
4	22.91	74168	39635
5	29.63	134295	16729

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#2098,RINSATE #1 9SL 4LO

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/04/89
Date Analyzed: 6/16/89 1:32
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction __ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	10.	U	83-32-9	Acenaphthene	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U	51-28-5	2,4-Dinitrophenol	50.	U
95-57-8	2-Chlorophenol	10.	U	100-02-7	4-Nitrophenol	50.	U
541-73-1	1,3-Dichlorobenzene	10.	U	132-64-9	Dibenzofuran	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U	121-14-2	2,4-Dinitrotoluene	10.	U
100-51-6	Benzyl Alcohol	10.	U	606-20-2	2,6-Dinitrotoluene	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U	84-66-2	Diethylphthalate	10.	U
95-48-7	2-Methylphenol	10.	U	7005-72-3	4-Chlorophenyl-phenylether	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U	86-73-7	Fluorene	10.	U
106-44-5	4-Methylphenol	10.	U	100-01-6	4-Nitroaniline	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U	534-52-1	4,6-Dinitro-2-methylphenol	50.	U
67-72-1	Hexachloroethane	10.	U	86-30-6	N-Nitrososdiphenylamine (1)	10.	U
98-95-3	Nitrobenzene	10.	U	101-55-3	4-Bromophenyl-phenylether	10.	U
78-59-1	Isophorone	10.	U	118-74-1	Hexachlorobenzene	10.	U
88-75-5	2-Nitrophenol	10.	U	87-86-5	Pentachlorophenol	50.	U
105-67-9	2,4-Dimethylphenol	10.	U	85-01-8	Phenanthrene	10.	U
65-85-0	Benzoic Acid	50.	U	120-12-7	Anthracene	10.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U	84-74-2	Di-n-Butyl phthalate	10.	U
120-83-2	2,4-Dichlorophenol	10.	U	206-44-0	Fluoranthene	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U	129-00-0	Pyrene	10.	U
91-20-3	Naphthalene	10.	U	85-68-7	Butylbenzylphthalate	10.	U
106-47-8	4-Chloroaniline	10.	U	91-94-1	3,3'-Dichlorobenzidine	20.	U
87-68-3	Hexachlorobutadiene	10.	U	56-55-3	Benzo(a)Anthracene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U	117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
91-57-6	2-Methylnaphthalene	10.	U	218-01-9	Chrysene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U	117-84-0	Di-n-Octyl phthalate	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U	205-99-2	Benzo(b)Fluoranthene	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U	207-08-9	Benzo(k)Fluoranthene	10.	U
91-58-7	2-Chloronaphthalene	10.	U	50-32-8	Benzo(a)Pyrene	10.	U
88-74-4	2-Nitroaniline	50.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	10.	U
131-11-3	Dimethylphthalate	10.	U	53-70-3	Dibenzo(a,h)Anthracene	10.	U
208-96-8	Acenaphthylene	10.	U	191-24-2	Benzo(g,h,i)Perylene	10.	U
99-09-2	3-Nitroaniline	50.	U				

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

Rinsate #1 9SL H_2O

Lab Name: EA Laboratories Contract: 10388-03

Lab Code: _____ Case No.: Willow Gr. SAS No.: _____ SDG No.: _____

Matrix: (soil/water) H_2O Lab Sample ID: EA# 2098

Sample wt/vol: 1000 (g/mL) mL Lab File ID: 2FC451

Level: (low/med) Low Date Received: 5/3/89

% Moisture: not dec. — dec. — Date Extracted: 5/4/89

Extraction: (SepF/Cont/Sonc) Cont Date Analyzed: 6/16/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: _____

Number TICs found: 0

CONCENTRATION UNITS: (ug/L or ug/Kg) _____

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
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25.				
26.				
27.				
28.				
29.				
30.				

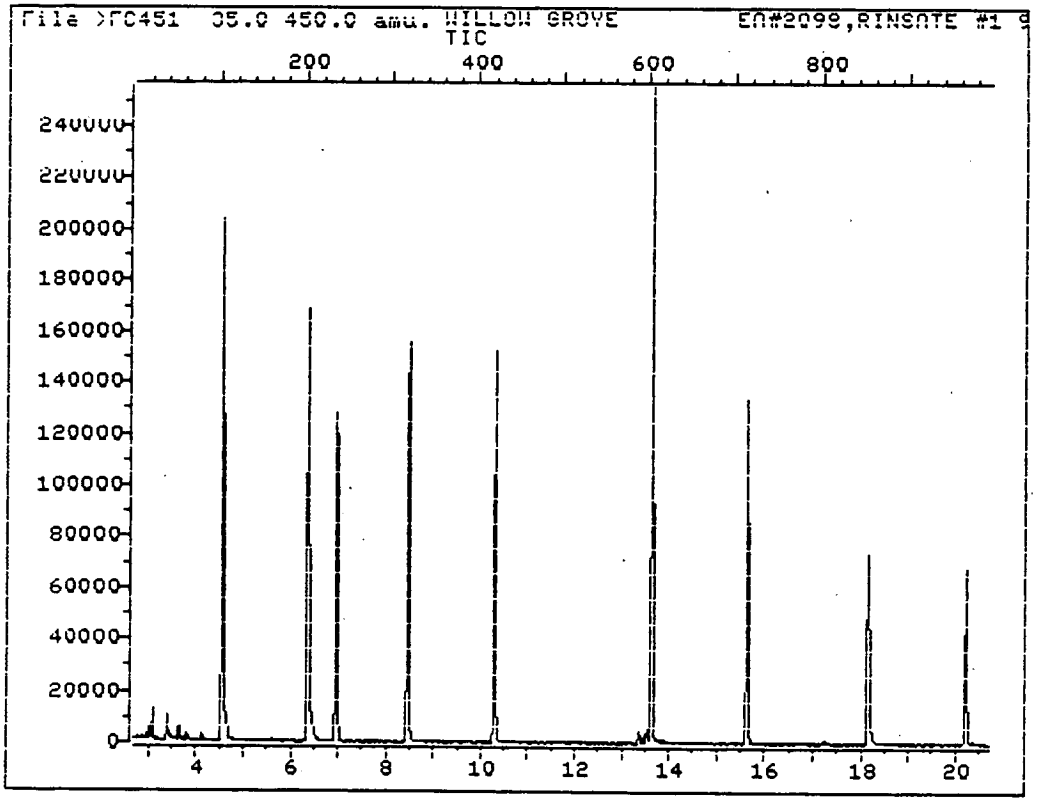
Peaks Found

ND

FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



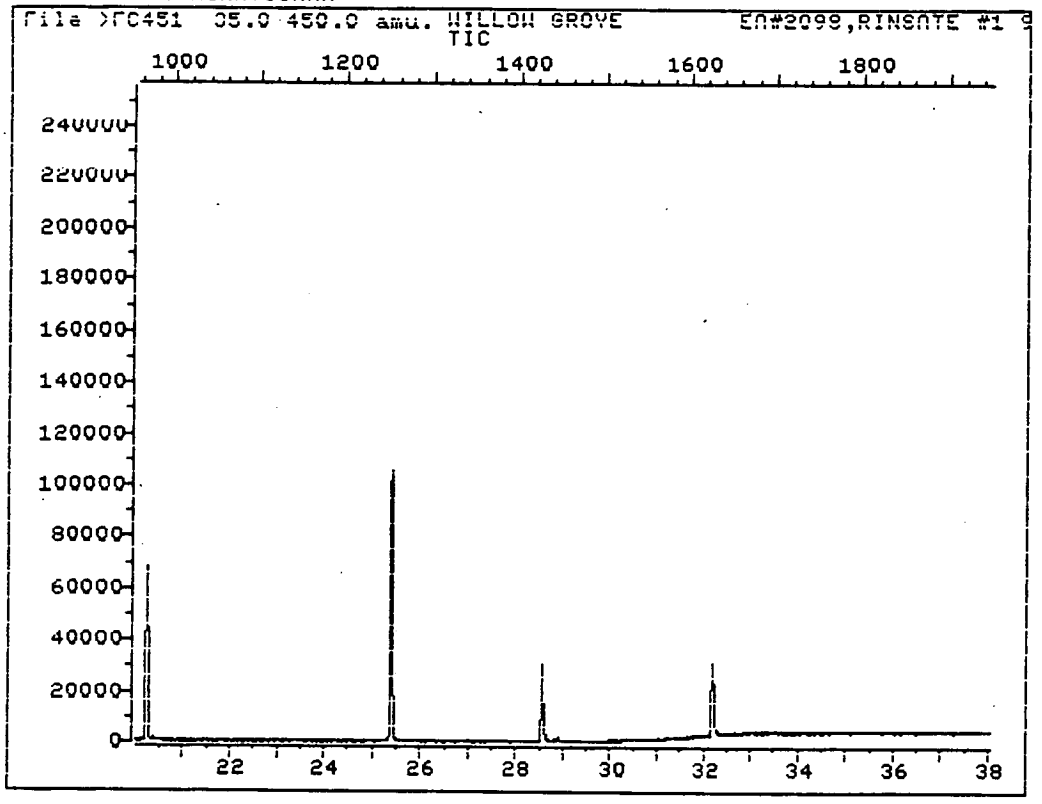
Data File: >FC451::D5 Quant Output File: ^FC451::QT
Name: WILLOW GROVE
Misc: EA#2098,RINSATE #1 9SL H2O,WATER,1000mL,2mL BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890615 20:13

Operator ID: UNCLE
Quant Time: 890616 02:13
Injected at: 890616 01:32

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC451::D5 Quant Output File: ^FC451::QT
Name: WILLOW GROVE
Misc: EA#2098,RINSATE #1 9SL H2O,WATER,1000mL,2mL BTL# 7

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890615 20:13

Operator ID: UNCLE
Quant Time: 890616 02:13
Injected at: 890616 01:32

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890616 02:13
Output File: ^FC451::QT Injected at: 890616 01:32
Data File: >FC451::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2098,RINSATE #1 9SL H2O,WATER,1000mL,2mL BTL# 7

ID File: IDFCLP::8D
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890615 20:13

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	6.96	152.0	51452	40.00	NG	96
2)	2-Fluorophenol	4.57	112.0	100263	58.79	NG ✓29%	89
3)	Phenol-d5	6.36	99.0	140496	71.30	NG ✓36%	91
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.30	136.0	181001	40.00	NG	87
17)	Nitrobenzene-d5	8.48	82.0	117944	69.46	NG ✓69%	91
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	15.63	164.0	76899	40.00	NG	94
32)	H xachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	13.63	172.0	220001	83.60	NG ✓84%	95
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	15.65	163.0	26283	~~8.57~~	NG	53
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Ac naphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FC451:: Data File:>FC451::D5

	Compound	R.T.	Q ion	Area	Conc	Units		q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG		
44)	Dibenzofuran	0.00	168.0	0	0.00	NG		
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG		
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG		
47)	Diethylphthalate	0.00	149.0	0	0.00	NG		
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG		
49)	Fluorene	0.00	166.0	0	0.00	NG		
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG		
51)	*d10-Phenanthrene	20.22	188.0	78481	40.00	NG		99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG		
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG		
54)	2,4,6-Tribromophenol	18.15	329.9	35190	117.84	NG	✓59%	91
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG		
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG		
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG		
58)	Ph nanthrene	0.00	178.0	0	0.00	NG		
59)	Anthracene	0.00	178.0	0	0.00	NG		
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG		
61)	Fluoranthene	0.00	202.0	0	0.00	NG		
62)	*d12-Chrysene	28.56	240.0	36188	40.00	NG		97
63)	Pyrene	0.00	202.0	0	0.00	NG		
64)	Terphenyl-d14	25.39	244.0	129276	132.68	NG	✓133%	83
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG		
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG		
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG		
68)	bis(2-Ethylhexyl)phthalate	28.90	149.0	1198	~~.87~~	~~NG~~		92
69)	Chrysene	0.00	228.0	0	0.00	NG		
70)	*d12-Perylene	32.19	264.0	39619	40.00	NG		93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG		
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG		
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG		
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG		
75)	Ind no(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG		
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG		
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG		

* Compound is ISTD

4 175

>FC451 WILLOW GROVE EA#2098,RINSATE #1 9SL H2O,WATER,1000mL,

35.01 450.0 CLP ADC TIC
Upslope: .20 Area Reject: 9726. Max Peaks: 5 Bunching: -1
Dnslope: 0.00 Results File IFC451 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	3.08	19	22	31	11988	27806	18451	58.43	21.141
2	3.40	36	40	51	9651	41261	31576	100.00	36.180
3	3.66	51	54	58	5688	19310	14916	47.24	17.091
4	13.38	586	590	592	4791	10152	9996	31.66	11.453
5	13.54	597	599	601	5983	13617	12336	39.07	14.135

Sum of corrected areas: 87275.

Summary of PBM Library Search and Quantitation on file :>FC451::D5

Internal Standard	Concentration	Area	Retention Time	Unknown Window
1	40.0	330398.	6.96	2.70 - 8.63
2	40.0	381937.	10.30	8.63 - 12.96
3	40.0	374099.	15.63	12.96 - 17.92
4	40.0	197897.	20.22	17.92 - 24.39
5	40.0	97260.	28.56	24.39 - 30.37
6	40.0	103185.	32.19	30.37 - 38.04

CALCULATIONS

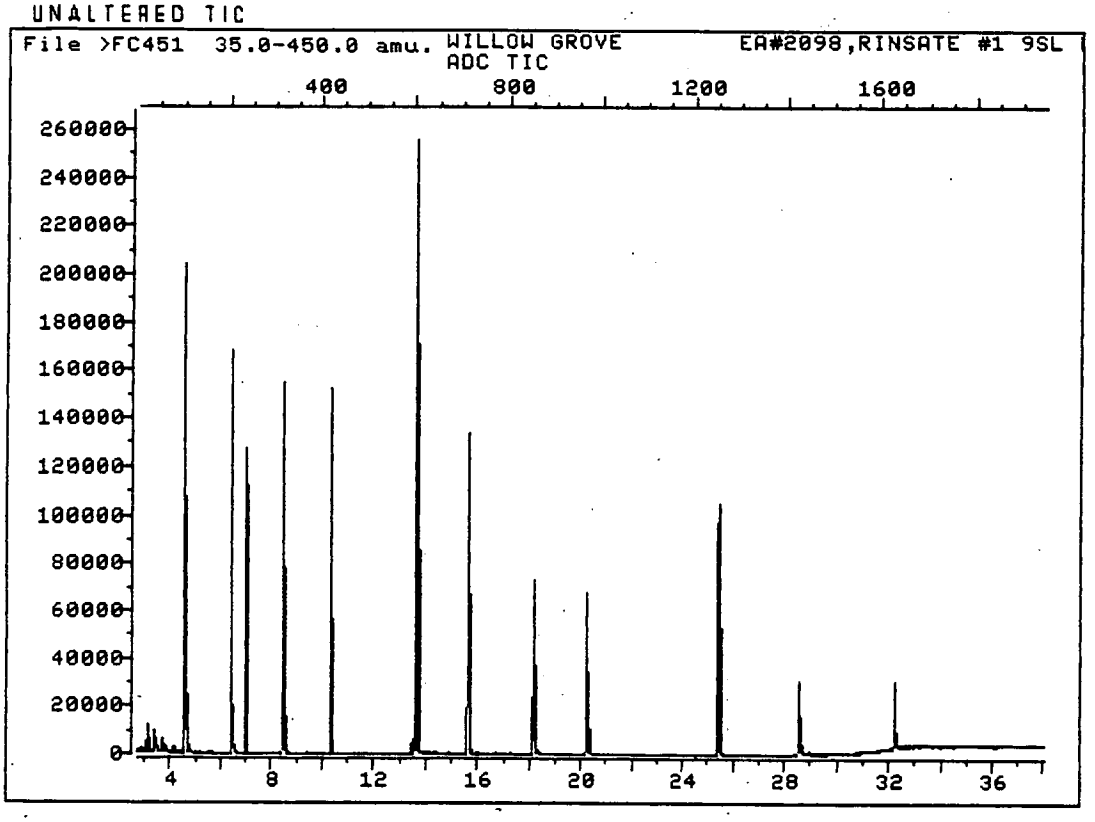
Dilution Factor (DF) = 1.00 Fractional Solids (FS) = 1.00
Amount Method (AM) = 1000.00 Amount Used (AU) = 10.66

Correction Factor = 93.81 = (AM / AU) / (DF * FS)

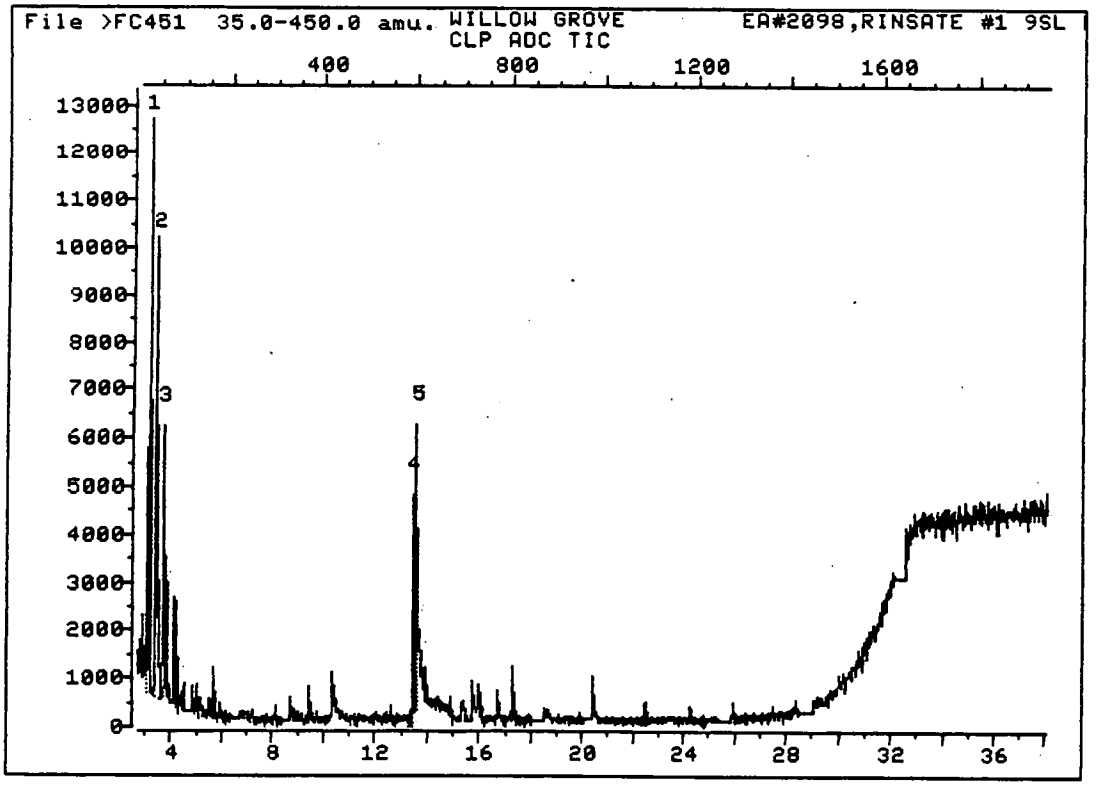
$$\text{Unknown Concentration} = \frac{\text{Conc Int Std}}{\text{Area Int Std}} * \text{Area Unk} * \text{Correction Factor}$$

7:37 PM SUN., 23 JULY, 1989

UNALTERED TIC



CLIPPED TIC



>FC451 WILLOW GROVE EA#2098,RINSATE #1 9SL H2O,WATER,1000mL,

35.01 450.0 TIC
Upslope: .20 Area Reject: 5.00 % Max Peaks: 12 Bunching: -1
Dnslope: 0.00 Results File IFC451 Sorted by Time/Area INT

Peak #	R.T. min.	first scan	max scan	last scan	peak height	raw area	corr. area	corr. % max.	% of total
1	4.57	101	104	113	203660	397979	389021	58.66	9.874
2	6.36	197	203	228	168063	487284	471841	71.15	11.976
3	6.96	231	236	246	127441	337798	330398	49.82	8.386
4	8.48	312	320	329	155141	409108	401946	60.61	10.202
5	10.30	415	420	430	152119	390055	381937	57.60	9.694
6	13.63	597	604	615	254955	675967	663134	100.00	16.832
7	15.65	710	715	722	134236	380466	374099	56.41	9.495
8	18.15	846	853	868	73106	236411	226296	34.13	5.744
9	20.24	960	968	973	67389	204567	197897	29.84	5.023
10	25.40	1246	1253	1263	104864	312205	302794	45.66	7.686
11	28.56	1422	1427	1438	30791	109040	97260	14.67	2.469
12	32.21	1624	1628	1637	28232	152308	103185	15.56	2.619

Sum of corrected areas: 3939808.

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#2099,RINSATE #2 9SL H2O

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/04/89
Date Analyzed: 6/16/89 2:24
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl Alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic Acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
99-09-2	3-Nitroaniline	50.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	10.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrososdiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-Butyl phthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)Anthracene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
218-01-9	Chrysene	10.	U
117-84-0	Di-n-Octyl phthalate	10.	U
205-99-2	Benzo(b)Fluoranthene	10.	U
207-08-9	Benzo(k)Fluoranthene	10.	U
50-32-8	Benzo(a)Pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.	U
53-70-3	Dibenzo(a,h)Anthracene	10.	U
191-24-2	Benzo(g,h,i)Perylene	10.	U

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSATE #2 95L H_2O

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: _____ Case No.: WILLOW GR. SAS No.: _____ SDG No.: _____

Matrix: (soil/water) H_2O Lab Sample ID: EA#2095

Sample wt/vol: 1000 (g/mL) mL Lab File ID: >EC 452

Level: (low/med) LOW Date Received: 5/3/89

% Moisture: not dec. — dec. — Date Extracted: 5/4/89

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 6/16/89

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: _____

Number TICs found: 0

CONCENTRATION UNITS: (ug/L ~~or ug/Kg~~) _____

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				
2.				
3.				
4.				
5.				
6.				
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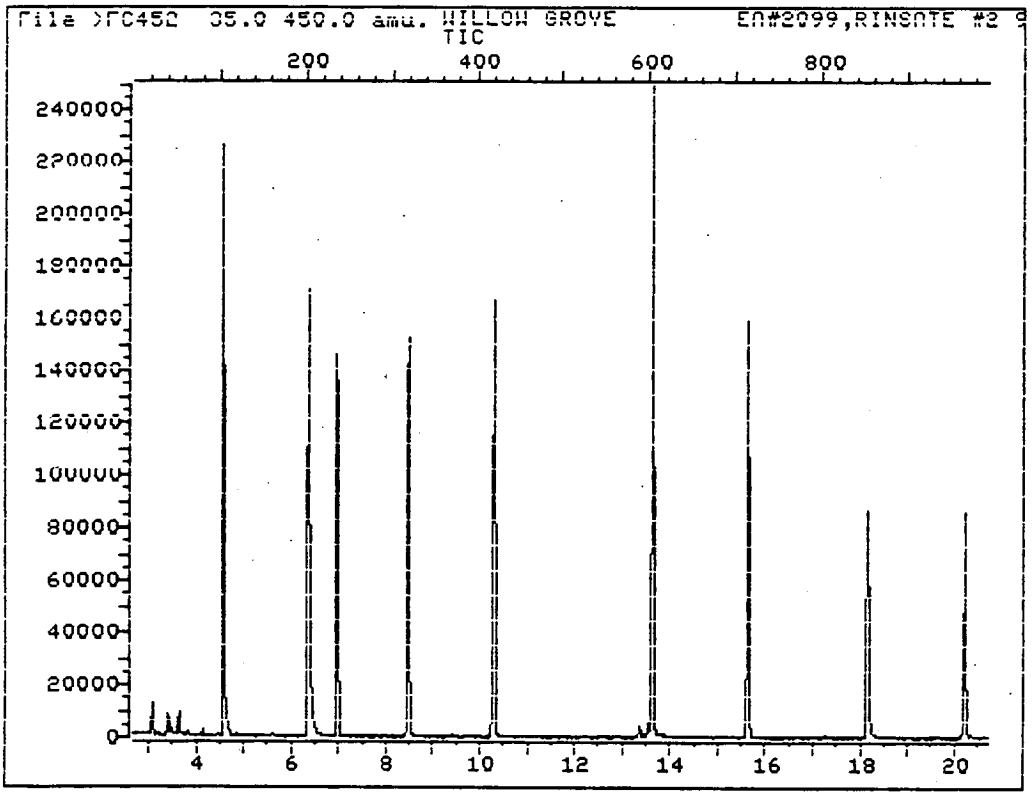
25.				
26.				
27.				
28.				
29.				
30.				

NO PEAKS FOUND

FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



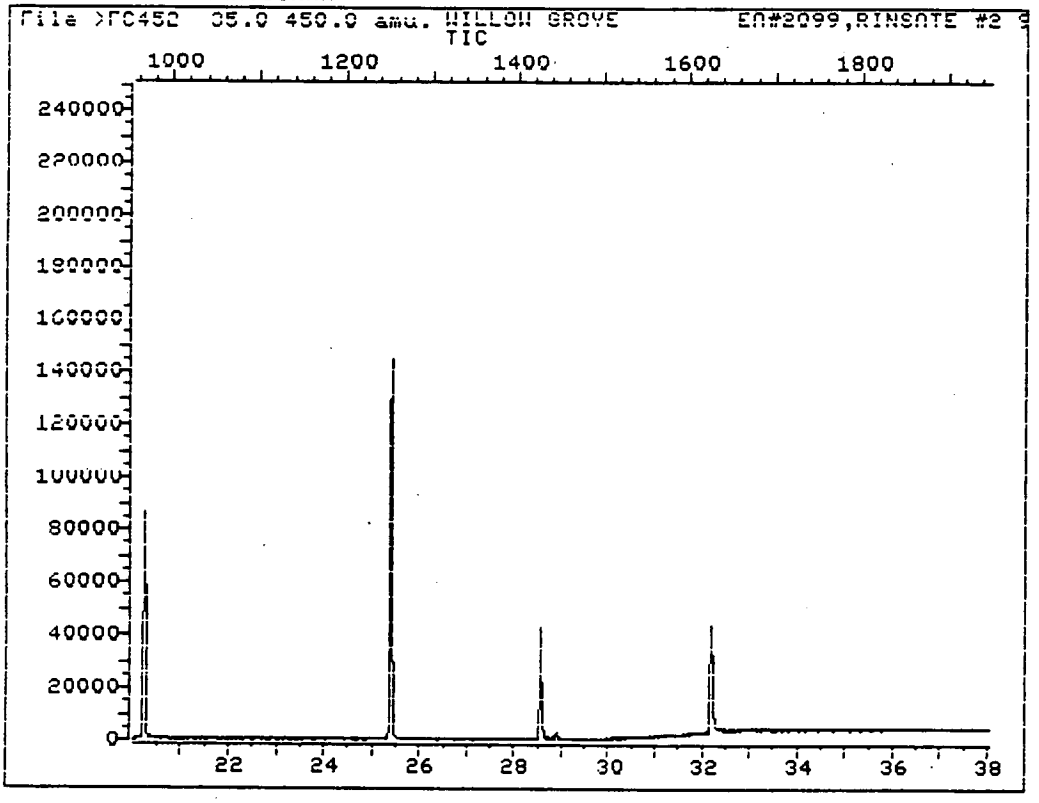
Data File: >FC452::D5 Quant Output File: ^FC452::QT
Name: WILLOW GROVE
Misc: EA#2099,RINSATE #2 9SL H2O,WATER,1000mL,2mL BTL# 8

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890615 20:13

Operator ID: UNCLE
Quant Time: 890616 03:06
Injected at: 890616 02:24

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC452::D5 Quant Output File: ^FC452::QT
Name: WILLOW GROVE
Misc: EA#2099,RINSATE #2 9SL H2O,WATER,1000mL,2mL BTL# 8

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890615 20:13

Op rator ID: UNCLE
Quant Time: 890616 03:06
Injected at: 890616 02:24

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890616 03:06
Output File: ^FC452::QT Injected at: 890616 02:24
Data Fil : >FC452::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2099,RINSATE #2 9SL H2O,WATER,1000mL,2mL BTL# 8

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890615 20:13

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	6.96	152.0	59821	40.00	NG	95
2)	2-Fluorophenol	4.56	112.0	108297	54.61	NG ✓27%	88
3)	Phenol-d5	6.36	99.0	148804	64.95	NG ✓32%	94
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.30	136.0	212469	40.00	NG	88
17)	Nitrobenzene-d5	8.48	82.0	121179	60.80	NG ✓61%	94
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	15.65	164.0	88431	40.00	NG	98
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	13.63	172.0	221197	73.09	NG ✓73%	97
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	15.65	163.0	29973	~~8.50~~	~~NG~~	53
39)	Ac naphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthen	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FC452:: Data File:>FC452::D5

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.23	188.0	96250	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.15	329.9	42140	115.06	NG ✓58%	96
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	22.45	149.0	1260	~~.25~~	~~NG~~	99
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	28.56	240.0	47955	40.00	NG	97
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	25.40	244.0	170181	131.80	NG ✓132%	85
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	28.90	149.0	1639	~~.90~~	~~NG~~	94
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.19	264.0	54681	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
EA#2158,RINSATE-1
ETA-H2O

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/05/89
Date Analyzed: 5/31/89 2:33
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup _ Yes ✓ No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl Alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic Acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
99-09-2	3-Nitroaniline	50.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	10.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrososdiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-Butyl phthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)Anthracene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
218-01-9	Chrysene	10.	U
117-84-0	Di-n-Octyl phthalate	10.	U
205-99-2	Benzo(b)Fluoranthene	10.	U
207-08-9	Benzo(k)Fluoranthene	10.	U
50-32-8	Benzo(a)Pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.	U
53-70-3	Dibenzo(a,h)Anthracene	10.	U
191-24-2	Benzo(g,h,i)Perylene	10.	U

(1)-Cannot be separated from diphenylamine

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

RINSATE-1 ~~FTA~~ H_2O

Lab Name: EA LABORATORIES Contract: _____

Lab Code: _____ Case No.: WILLOW GR. SAS No.: _____ SDG No.: _____

Matrix: (soil/water) H_2O Lab Sample ID: EA#2158

Sample ~~wt~~/vol: 1000mL (~~g~~/mL) _____ Lab File ID: >FC 311

Level: (low/~~med~~) LOW Date Received: 5/4/89

% Moisture: not dec. N/A dec. N/A Date Extracted: 5/5/89

Extraction: (~~Sep~~F/Cont/~~Sonc~~) _____ Date Analyzed: ~~6/14/89~~ 5/31/89

GPC Cleanup: (Y/N) N pH: _____ Dilution Factor: _____

Number TICs found: 1 CONCENTRATION UNITS: (ug/L ~~or ug/Kg~~) _____

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	108941	Cyclohexanone	5.37	1000	
2.					
3.					
4.					
5.					
6.					
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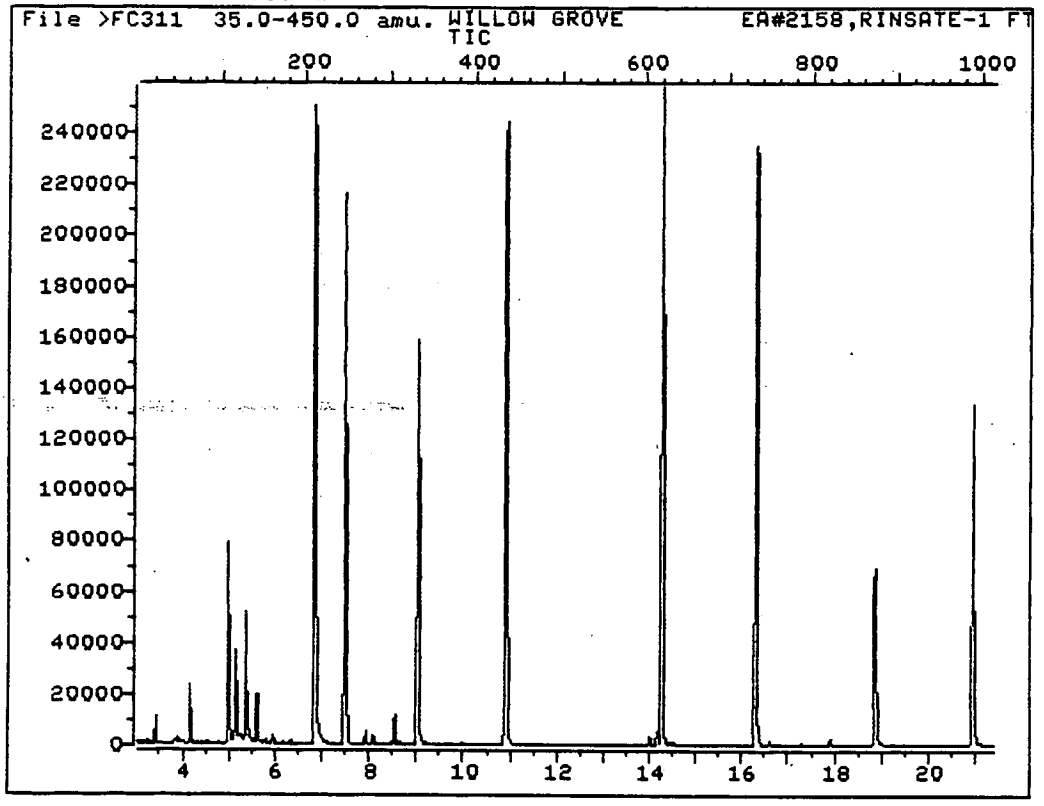
27.					
28.					
29.					
30.					

FORM I SV-TIC

1/87 Rev.

TOTAL ION CHROMATOGRAM



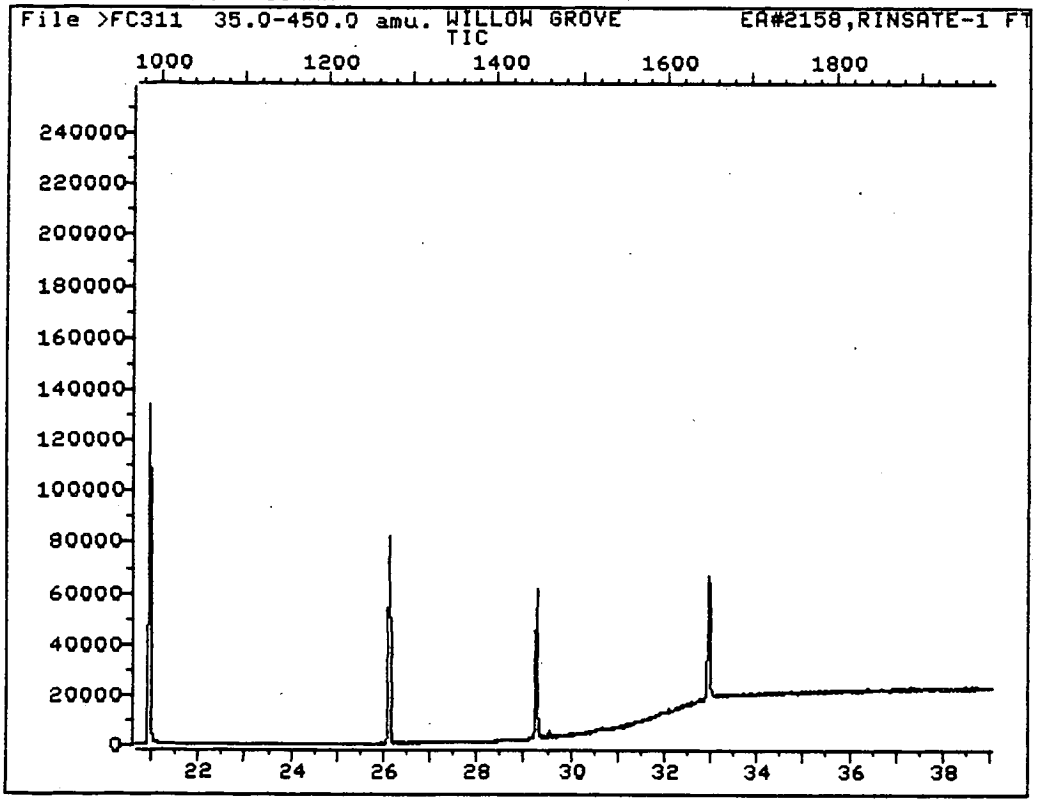
Data File: >FC311::D4 Quant Output File: ^FC311::QT
Nam : WILLOW GROVE
Misc: EA#2158,RINSATE-1 FTA H2O,WATER,1000mL,2mL BTL# 5

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 03:16
Injected at: 890531 02:33

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC311::D4 Quant Output File: ^FC311::QT
Name: WILLOW GROVE
Misc: EA#2158,RINSATE-1 FTA H2O,WATER,1000mL,2mL BTL# 5

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 03:16
Injected at: 890531 02:33

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890531 03:16
Output File: ^FC311::QT Injected at: 890531 02:33
Data File: >FC311::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#2158,RINSATE-1 FTA H2O,WATER,1000mL,2mL BTL# 5

ID File: IDFCLP::BD
Titl : HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

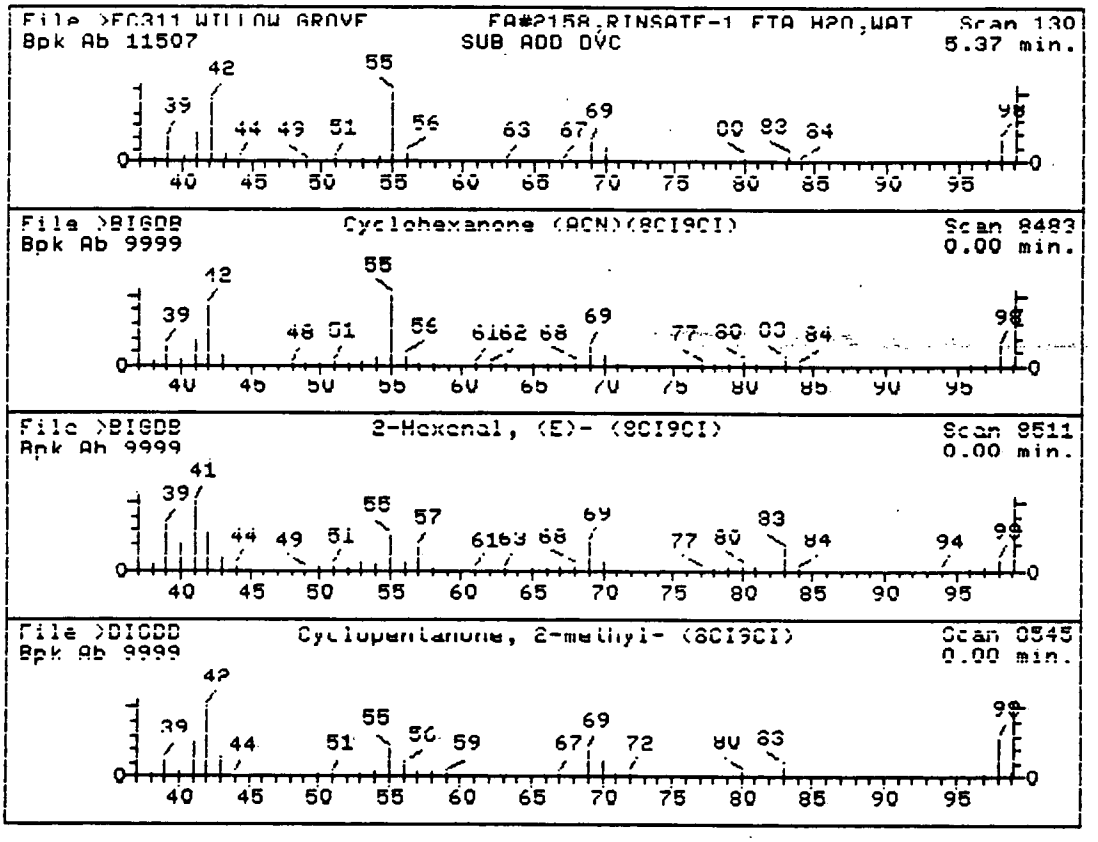
	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.49	152.0	94383	40.00	NG	94
2)	2-Fluorophenol	4.99	112.0	42110	13.41	NG 13%	87
3)	Phenol-d5	6.84	99.0	223788	57.07	NG 57%	87
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.90	136.0	349569	40.00	NG	85
17)	Nitrobenzene-d5	9.04	82.0	113554	38.49	NG 77%	90
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	16.31	164.0	150674	40.00	NG	92
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	14.28	172.0	218937	38.88	NG 78%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	16.33	163.0	50360	~~8.14~~	NG	53
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FC311:: Data File:>FC311::D4

	Compound	R.T.	Q ion	Area	Conc	Units		q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG		
44)	Dibenzofuran	0.00	168.0	0	0.00	NG		
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG		
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG		
47)	Diethylphthalate	0.00	149.0	0	0.00	NG		
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG		
49)	Fluorene	0.00	166.0	0	0.00	NG		
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG		
51)	*d10-Phenanthrene	20.95	188.0	147224	40.00	NG		99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG		
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG		
54)	2,4,6-Tribromophenol	18.85	329.9	32896	44.86	NG	45%	95
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG		
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG		
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG		
58)	Phenanthrene	0.00	178.0	0	0.00	NG		
59)	Anthracene	0.00	178.0	0	0.00	NG		
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG		
61)	Fluoranthene	0.00	202.0	0	0.00	NG		
62)	*d12-Chrysene	29.28	240.0	56923	40.00	NG		98
63)	Pyrene	0.00	202.0	0	0.00	NG		
64)	Terphenyl-d14	26.12	244.0	96867	44.91	NG	90%	83
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG		
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG		
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG		
68)	bis(2-Ethylhexyl)phthalate	29.55	149.0	1679	~~.68~~	NG		96
69)	Chrysene	0.00	228.0	0	0.00	NG		
70)	*d12-Perylene	32.96	264.0	60059	40.00	NG		93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG		
72)	B nzo(b)Fluoranthene	0.00	252.0	0	0.00	NG		
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG		
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG		
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG		
76)	Dib nzo(a,h)Anthracene	0.00	278.0	0	0.00	NG		
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG		

* Compound is ISTD



Retention time = 5.37

Area = 124316.0 Tentative Concentration is 1000.00

1.	Cyclohexanone (ACN)(8CI9CI)	98 C6H10O
2.	2-Hexenal, (E)- (8CI9CI)	98 C6H10O
3.	Cyclopentanone, 2-methyl- (8CI9CI)	98 C6H10O
4.	Methanamine, N-pentylidene- (9CI)	99 C6H13N
5.	Cyclopentane (DOT)(8CI9CI)	70 C5H10
6.	Cyclobutanone (8CI9CI)	70 C4H6O
7.	1-Pentene (8CI9CI)	70 C5H10

Sample file: >FC311 Spectrum #: 130
Search speed: 2 Tilting option: S No. of ion ranges searched: 49

	Prob.	CAS #	CON #	ROOT	K	DK	#FLG	TILT	%	CON	C	I	R	IV
1.	76*	108941	8483	"BIGDB	43	59	1	0	72	10		45		22
2.	70*	6728263	8511	"BIGDB	28	80	3	0	159	6		42		13

3.	67*	1120725	8545	"BIGDB	47	50	2	0	60	15	34	23
4.	43*	10599754	3487	"BIGDB	29	46	3	0	89	23	17	14
5.	33*	287923	3468	"BIGDB	23	51	0	0	61	31	12	16
6.	31*	1191953	3478	"BIGDB	20	56	1	0	89	31	12	14
7.	21*	109671	3465	"BIGDB	36	50	0	0	56	56	5	39

LIBRARY SEARCH SUMMARY

MS Data Fil :>FC311::D4 Analyst:UNCLE MS

Name:WILLOW GROVE Date/Time: 5/31/89 2:33
Misc:EA#2158,RINSATE-1 FTA H2O,WATER,1000mL,2mL BTL# 5

The following hits are >10% of the nearest ISTD.

Peak # in PBM file	Retention Time	Peak Area	10% of Nearest ISTD Area
1	5.37	124316	57763

C. Standards Data

Initial Calibration Data
HSL Compounds

Case No: Willow Grove

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: ~~06/10/89~~ 05/26/89

Contract No: 10388.03

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FC275	>FC271	>FC274	>FC273	>FC272					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2-Fluorophenol	1.37849	1.38216	1.26922	1.19934	1.13184	.664	1.27221	8.647		
Phenol-d5	1.79180	1.79470	1.44292	1.27817	1.15350	.915	1.49222	19.659		
Phenol	2.05259	1.95139	1.50280	1.41315	1.25515	.920	1.63502	21.307	*	
bis(2-Chloroethyl)ether	1.68888	1.77219	1.47009	1.51947	1.53300	.938	1.59673	8.005		
2-Chlorophenol	1.56272	1.55067	1.40496	1.37391	1.29398	.948	1.43725	8.098		
1,3-Dichlorobenzene	1.74476	1.63756	1.49180	1.35377	1.19988	.987	1.48556	14.644		
1,4-Dichlorobenzene	1.77227	1.62201	1.42357	1.29131	1.14370	1.005	1.45057	17.343	*	
Benzyl Alcohol	.18922	.71255	.45833	.55200	.62051	1.064	.50652	39.548		
1,2-Dichlorobenzene	1.70952	1.54695	1.34584	1.15660	1.04126	1.065	1.36003	20.146		
2-Methylphenol	1.36361	1.53888	1.24207	1.14883	1.04385	1.106	1.26745	15.158		
bis(2-Chloroisopropyl)ether	3.88186	3.89676	3.31757	3.04708	2.85720	1.110	3.40010	13.989		
4-Methylphenol	1.33886	1.22071	1.04014	.95741	.88672	1.162	1.08877	17.207		
N-Nitroso-Di-n-propylamine	1.50905	1.36453	1.18296	1.17883	1.15804	1.168	1.27868	11.997		**
Hexachloroethane	.70149	.62357	.46954	.42648	.45488	1.163	.53519	22.508		
Nitrobenzene-d5	.41786	.40664	.37600	.35147	.35390	.829	.38118	7.922		
Nitrobenzene	.46374	.44701	.40634	.37414	.34895	.834	.40804	11.795		
Isophorone	1.00154	.96629	.86710	.85961	.88022	.890	.91495	7.060		
2-Nitrophenol	.20799	.20529	.20034	.19435	.18488	.912	.19857	4.658	*	
2,4-Dimethylphenol	.35196	.34624	.33773	.34049	.32962	.928	.34121	2.486		
Benzoic Acid	-	.13011	.12592	.12743	.05182	.969	.10882	34.958		
bis(2-Chloroethoxy)methane	.55933	.52418	.47633	.43849	.43776	.953	.48722	11.007		
2,4-Dichlorophenol	.30418	.27063	.26726	.24866	.22485	.973	.26312	11.134	*	
1,2,4-Trichlorobenzene	.36940	.31956	.31532	.29007	.25948	.989	.31077	13.066		
Naphthalene	1.09892	.97242	.81991	.66801	.56313	1.006	.82448	26.435		
4-Chloroaniline	.40333	.37127	.34806	.32616	.31768	1.034	.35330	9.865		
Hexachlorobutadiene	.23550	.19610	.19216	.17138	.15571	1.051	.19017	15.852	*	
4-Chloro-3-methylphenol	.30076	.30011	.29688	.27896	.26420	1.173	.28818	5.586	*	
2-Methylnaphthalene	.63893	.55883	.51501	.46459	.44082	1.192	.52364	15.083		
Hexachlorocyclopentadiene	.26935	.30243	.28808	.30772	.30046	.839	.29361	5.230		**
2,4,6-Trichlorophenol	.42354	.43568	.40326	.38459	.37407	.861	.40423	6.378	*	

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Willow Grove Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES Calibration Date: ~~06/10/89~~ 05/26/89

Contract No: 10388.03

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Compound	Laboratory ID: >FC275 RF 20.00	>FC271 RF 50.00	>FC274 RF 80.00	>FC273 RF 120.00	>FC272 RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2,4,5-Trichlorophenol	.41818	.42469	.44001	.42795	.37620	.868	.41741	5.836		
2-Chloronaphthalene	1.44218	1.34881	1.25293	1.13393	1.06201	.891	1.24797	12.381		
2-Fluorobiphenyl	1.70636	1.57827	1.43578	1.29012	1.18205	.875	1.43851	14.709		
2-Nitroaniline	-	.45259	.42930	.41099	.42653	.926	.42985	3.993		
Dimethylphthalate	1.95057	1.82068	1.64287	1.46282	1.29088	.968	1.63357	16.259		
Acenaphthylene	2.07157	1.96634	1.79493	1.46204	1.16175	.971	1.69133	22.201		
3-Nitroaniline	-	.21799	.19833	.17911	.18581	1.008	.19531	8.749		
Acenaphthene	1.38907	1.26184	1.10503	.99215	.90865	1.007	1.13135	17.293	*	
2,4-Dinitrophenol	-	.04966	.04230	.05144	.06680	1.026	.05255	19.581		**
4-Nitrophenol	-	.06493	.06327	.06292	.07065	1.049	.06544	5.473		**
Dibenzofuran	1.67527	1.58526	1.48809	1.36096	1.22996	1.037	1.46791	12.054		
2,4-Dinitrotoluene	.35556	.38089	.37524	.36096	.36362	1.055	.36725	2.854		
2,6-Dinitrotoluene	.37237	.39796	.37682	.36680	.35246	.982	.37328	4.438		
Diethylphthalate	1.75461	1.57845	1.37682	1.18348	1.01176	1.103	1.38102	21.539		
4-Chlorophenyl-phenylether	.67373	.63093	.59169	.53750	.47452	1.107	.58167	13.437		
Fluorene	1.14383	1.01152	.85434	.73700	.65743	1.103	.88082	22.531		
4-Nitroaniline	-	.15328	.14302	.13984	.14047	1.127	.14415	4.329		
4,6-Dinitro-2-methylphenol	-	.13515	.14008	.14301	.14874	.882	.14174	4.008		
N-Nitrosodiphenylamine	.78029	.76366	.70585	.66550	.58628	.884	.70032	11.211	*	
2,4,6-Tribromophenol	.15002	.17227	.16377	.17544	.17002	.900	.16630	6.048		
4-Bromophenyl-phenylether	.36015	.34251	.33886	.32912	.30834	.935	.33580	5.662		
Hexachlorobenzene	.45389	.42692	.41882	.39821	.37659	.954	.41489	7.054		
Pentachlorophenol	-	.13042	.13350	.13660	.14704	.984	.13689	5.277	*	
Phenanthrene	1.09262	1.12112	1.04550	.99980	.96703	1.004	1.04522	6.086		
Anthracene	1.04654	1.04201	.99181	.95120	.94109	1.010	.99453	4.951		
Di-n-Butyl phthalate	2.03525	1.99927	1.84577	1.53897	1.32232	1.104	1.74832	17.632		
Fluoranthene	.74726	.74371	.72668	.69505	.70199	1.184	.72294	3.283	*	
Pyrene	2.13595	2.18234	2.00502	1.94016	1.80329	.872	2.01335	7.579		
Terphenyl-d14	1.61171	1.65783	1.56269	1.48118	1.40186	.893	1.54305	6.644		
Butylbenzylphthalate	1.16771	1.23211	1.11942	1.06444	1.00921	.951	1.11858	7.767		

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Willow Grove

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: ~~06/10/89~~ 05/26/89 MD

Contract No: 10388.03

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FC275	>FC271	>FC274	>FC273	>FC272					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
3,3'-Dichlorobenzidine	.39780	.39956	.46601	.46830	.47612	1.001	.44156	8.907		
Benzo(a)Anthracene	1.27408	1.30852	1.24586	1.22660	1.24609	.999	1.26023	2.529		
bis(2-Ethylhexyl)phthalate	1.73321	1.83299	1.58713	1.56472	1.39929	1.009	1.62347	10.260		
Chrysene	1.21325	1.15734	1.13538	1.10133	1.11685	1.002	1.14483	3.808		
Di-n-Octyl phthalate	1.95983	2.26991	2.03401	1.99717	1.85525	.943	2.02324	7.572	*	
Benzo(b)Fluoranthene	1.20229	1.18816	1.17033	1.24124	1.23471	.971	1.20735	2.506		
Benzo(k)Fluoranthene	1.10068	1.19221	1.15637	1.02184	.97678	.973	1.08958	8.264		
Benzo(a)Pyrene	1.03430	1.10225	1.06428	1.03488	1.04021	.995	1.05518	2.751	*	
Indeno(1,2,3-cd)Pyrene	1.18437	1.18218	1.24321	1.21599	1.22684	1.095	1.21052	2.206		
Dibenzo(a,h)Anthracene	.94220	.93499	.99182	.96304	.96763	1.096	.95994	2.342		
Benzo(g,h,i)Perylene	1.00271	.99289	1.03987	1.01478	1.04278	1.124	1.01861	2.176		

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Willow Grove

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: ~~07/05/89~~ 06/15/89

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FC448	>FC444	>FC447	>FC446	>FC445					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2-Fluorophenol	1.25492	1.32596	1.11586	1.09657	1.16560	.655	1.19178	8.125		
Phenol-d5	1.43708	1.53193	1.11446	.95039	.95945	.916	1.19866	22.612		
Phenol	1.77248	1.74471	1.29398	1.15942	1.21036	.922	1.43619	20.775	*	
bis(2-Chloroethyl)ether	1.76304	1.77857	1.36502	1.41020	1.61168	.940	1.58570	12.164		
2-Chlorophenol	1.39992	1.39655	1.25212	1.21554	1.26428	.947	1.30568	6.616		
1,3-Dichlorobenzene	1.94092	1.53788	1.57428	1.43814	1.38951	.986	1.57615	13.770		
1,4-Dichlorobenzene	1.92409	1.49338	1.50597	1.32338	1.30145	1.006	1.50965	16.563	*	
Benzyl Alcohol	.27329	.85267	.66892	.75228	.93265	1.081	.69596	36.853		
1,2-Dichlorobenzene	1.89773	1.43018	1.38924	1.27584	1.29233	1.068	1.45706	17.480		
2-Methylphenol	1.27666	1.39147	1.09083	1.00884	1.06588	1.117	1.16674	13.784		
bis(2-Chloroisopropyl)ether	3.77151	3.52633	3.02930	2.77004	2.76672	1.117	3.17278	14.367		
4-Methylphenol	1.18399	1.02305	.92538	1.01361	1.03419	1.176	1.03605	9.004		
N-Nitroso-Di-n-propylamine	1.31850	1.30008	1.11050	1.12598	1.24313	1.180	1.21964	7.937		**
Hexachloroethane	.74774	.67088	.58612	.56439	.56616	1.170	.62706	12.807		
Nitrobenzene-d5	.36846	.37523	.32044	.31262	.33806	.823	.34296	8.174		
Nitrobenzene	.44129	.41102	.36852	.35436	.37461	.829	.38996	9.103		
Isophorone	1.00381	.87381	.79399	.79665	.90114	.887	.87388	9.906		
2-Nitrophenol	.21100	.20132	.18921	.18741	.19339	.909	.19647	4.954	*	
2,4-Dimethylphenol	.34102	.32018	.31927	.32008	.31382	.929	.32287	3.246		
Benzoic Acid	-	.11855	.11346	.11610	.09994	.978	.11201	7.423		
bis(2-Chloroethoxy)methane	.57557	.51560	.45698	.43057	.45749	.955	.48724	11.976		
2,4-Dichlorophenol	.29096	.24911	.26117	.25421	.23729	.973	.25855	7.776	*	
1,2,4-Trichlorobenzene	.44594	.31329	.35399	.32682	.29310	.989	.34663	17.241		
Naphthalene	1.12833	.89531	.84345	.75866	.75760	1.006	.87667	17.383		
4-Chloroaniline	.57530	.40646	.45231	.41879	.41947	1.039	.45447	15.327		
Hexachlorobutadiene	.29954	.19913	.23408	.21217	.17791	1.054	.22457	20.753	*	
4-Chloro-3-methylphenol	.27419	.27492	.23516	.25554	.25308	1.186	.25858	6.410	*	
2-Methylnaphthalene	.98061	.67034	.69993	.61297	.59466	1.203	.71170	21.949		
Hexachlorocyclopentadiene	.43209	.29129	.41766	.40443	.36376	.835	.38185	14.840		**
2,4,6-Trichlorophenol	.38761	.38435	.36678	.35412	.35186	.857	.36895	4.499	*	

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Wuzu Geuz

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: ~~07/05/89~~ 06/15/89 HD

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FC448	>FC444	>FC447	>FC446	>FC445					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
2,4,5-Trichlorophenol	.45976	.38070	.44656	.45246	.38858	.865	.42561	8.880		
2-Chloronaphthalene	1.54968	1.21173	1.28604	1.18367	1.10577	.887	1.26738	13.452		
2-Fluorobiphenyl	1.71221	1.36891	1.38219	1.28129	1.22662	.872	1.39424	13.549		
2-Nitroaniline	-	.46433	.50609	.50155	.53241	.926	.50110	5.594		
Dimethylphthalate	1.97332	1.59561	1.48474	1.36758	1.32856	.970	1.54996	16.695		
Acenaphthylene	2.00895	1.48827	1.44547	1.27684	1.20615	.969	1.48514	21.218		
3-Nitroaniline	-	.28836	.34979	.33580	.34126	1.011	.32880	8.385		
Acenaphthene	1.44030	1.14095	1.17968	1.08631	1.04582	1.007	1.17861	13.148	*	
2,4-Dinitrophenol	-	.10747	.04354	.07460	.11391	1.029	.08488	38.284		**
4-Nitrophenol	-	.06475	.06648	.06192	.07059	1.056	.06594	5.501		**
Dibenzofuran	2.48293	1.80080	2.01311	1.87277	1.75939	1.039	1.98580	14.814		
2,4-Dinitrotoluene	.42061	.35925	.39871	.38755	.39651	1.059	.39253	5.661		
2,6-Dinitrotoluene	.41558	.36466	.39486	.37717	.39317	.984	.38909	4.961		
Diethylphthalate	1.97198	1.66298	1.49419	1.31075	1.13207	1.110	1.51440	21.385		
4-Chlorophenyl-phenylether	.76029	.59092	.59940	.50764	.43112	1.112	.57788	21.261		
Fluorene	1.28409	1.00553	1.01472	.94124	.90166	1.107	1.02945	14.550		
4-Nitroaniline	-	.18443	.24571	.22090	.21920	1.135	.21756	11.580		
4,6-Dinitro-2-methylphenol	-	.17383	.16011	.16378	.15707	.880	.16370	4.453		
N-Nitrosodiphenylamine	.71442	.68364	.61570	.60021	.52259	.883	.62731	11.982	*	
2,4,6-Tribromophenol	.16916	.15221	.16024	.17068	.16576	.898	.16361	4.603		
4-Bromophenyl-phenylether	.38854	.34502	.36068	.36341	.33755	.934	.35904	5.483		
Hexachlorobenzene	.55031	.43174	.49666	.51433	.45372	.952	.48935	9.683		
Pentachlorophenol	-	.14304	.14997	.15173	.17392	.984	.15466	8.649	*	
Phenanthrene	1.17392	.97005	1.00569	.99839	1.00965	1.004	1.03154	7.861		
Anthracene	1.12261	.94010	.98251	.96467	.96063	1.010	.99410	7.384		
Di-n-Butyl phthalate	2.10529	2.09035	1.80576	1.82169	1.71052	1.110	1.90672	9.421		
Fluoranthene	1.09672	.83428	.92301	.83778	.89030	1.189	.91642	11.723	*	
Pyrene	1.55519	1.36741	1.35231	1.50869	1.44627	.867	1.44597	6.069		
Terphenyl-d14	1.19638	1.07700	1.10676	1.21785	1.17321	.889	1.15424	5.199		
Butylbenzylphthalate	.90621	.95561	.80462	.89068	.88319	.951	.88806	6.138		

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Willow Brook

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: ~~07/05/89~~ 06/15/89

Contract No:

Minimum $\overline{RF}$ for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FC448	>FC444	>FC447	>FC446	>FC445					
Compound	RF 20.00	RF 50.00	RF 80.00	RF 120.00	RF 160.00	$\overline{RRT}$	$\overline{RF}$	% RSD	CCC	SPCC
3,3'-Dichlorobenzidine	.42488	.27923	.44029	.42422	.42153	1.002	.39803	16.787		
Benzo(a)Anthracene	1.31443	1.11030	1.21008	1.24164	1.27221	.998	1.22973	6.269		
bis(2-Ethylhexyl)phthalate	1.37086	1.51855	1.23617	1.35713	1.26364	1.012	1.34927	8.229		
Chrysene	1.25962	1.03162	1.04450	1.06917	1.07298	1.003	1.09558	8.516		
Di-n-Octyl phthalate	1.63505	1.90949	1.57779	1.62499	1.64898	.947	1.67926	7.828	*	
Benzo(b)Fluoranthene	1.24663	1.08603	1.24725	1.24913	1.20141	.973	1.20609	5.808		
Benzo(k)Fluoranthene	1.09886	.96350	.92009	.88064	1.02420	.975	.97746	8.828		
Benzo(a)Pyrene	1.10151	.94762	.99970	1.02684	1.02306	.996	1.01975	5.449	*	
Indeno(1,2,3-cd)Pyrene	1.22030	.84074	1.14667	1.10727	1.13630	1.085	1.09025	13.352		
Dibenzo(a,h)Anthracene	.94516	.66016	.88942	.88294	.88906	1.086	.85335	12.997		
Benzo(g,h,i)Perylene	1.04953	.72120	.96988	.94459	.94784	1.110	.92661	13.212		

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Willow Grove Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES Calibration Date: 06/13/89

Contract No: 10388.03

Minimum RF for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FC418	>FC414	>FC417	>FC416	>FC415					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	RRT	RF	% RSD	CCC	SPCC
2-Fluorophenol	1.25502	1.26283	1.10607	1.06798	1.05237	.655	1.14885	8.913		
Phenol-d5	1.46682	1.39167	1.10353	.94817	.87307	.917	1.15665	22.798		
Phenol	1.69674	1.56162	1.23478	1.09910	1.03129	.921	1.32471	21.996	*	
bis(2-Chloroethyl)ether	1.74561	1.72589	1.31243	1.38465	1.44377	.940	1.52247	13.156		
2-Chlorophenol	1.41903	1.31394	1.23782	1.16884	1.13846	.948	1.25562	9.053		
1,3-Dichlorobenzene	1.97742	1.69663	1.53137	1.38564	1.31072	.987	1.58036	16.866		
1,4-Dichlorobenzene	1.93513	1.65941	1.48251	1.31805	1.18393	1.006	1.51581	19.426	*	
Benzyl Alcohol	.99348	.99890	.85265	.83073	.97153	1.072	.92946	8.730		
1,2-Dichlorobenzene	1.81856	1.46746	1.27441	1.12373	1.08208	1.069	1.35325	22.230		
2-Methylphenol	1.30728	1.25931	1.01985	.90467	.86146	1.117	1.07051	19.000		
bis(2-Chloroisopropyl)ether	3.89341	3.39733	3.13233	2.85335	2.72434	1.117	3.20015	14.580		
4-Methylphenol	1.20301	.93952	.82263	.89863	.92713	1.176	.95818	15.049		
N-Nitroso-Di-n-propylamine	1.36531	1.20033	1.13308	1.11880	1.16820	1.180	1.19714	8.287		**
Hexachloroethane	.70885	.62804	.55465	.53527	.50142	1.170	.58565	14.176		
Nitrobenzene-d5	.38421	.36245	.33582	.31905	.32457	.824	.34522	7.956		
Nitrobenzene	.45896	.42265	.38169	.35599	.33761	.829	.39138	12.635		
Isophorone	1.01540	.93382	.83323	.79659	.84592	.888	.88499	10.013		
2-Nitrophenol	.21403	.19745	.19953	.19417	.19287	.909	.19961	4.249	*	
2,4-Dimethylphenol	.37802	.34478	.32588	.30928	.31344	.928	.33428	8.400		
Benzoic Acid	-	.11403	.06675	.15838	.15177	.975	.12273	34.323		
bis(2-Chloroethoxy)methane	.58339	.52237	.46869	.44056	.44131	.954	.49127	12.478		
2,4-Dichlorophenol	.31635	.26159	.26390	.25021	.24534	.972	.26748	10.614	*	
1,2,4-Trichlorobenzene	.47477	.36651	.37266	.33490	.30894	.989	.37156	16.992		
Naphthalene	1.10451	.92564	.83012	.74418	.69784	1.006	.86046	18.802		
4-Chloroaniline	.58923	.48928	.46368	.44063	.42182	1.039	.48093	13.641		
Hexachlorobutadiene	.35540	.25592	.26814	.23759	.21042	1.054	.26549	20.625	*	
4-Chloro-3-methylphenol	.28345	.24816	.25572	.24934	.24164	1.184	.25566	6.382	*	
2-Methylnaphthalene	.94832	.75845	.68008	.61831	.55982	1.202	.71300	21.150		
Hexachlorocyclopentadiene	.55170	.47865	.51162	.49389	.46824	.835	.50082	6.552		**
2,4,6-Trichlorophenol	.46767	.42022	.42072	.41034	.40832	.857	.42545	5.702	*	

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Willow Grove

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: 06/13/89

Contract No: 60388.03

Minimum RF for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FC418	>FC414	>FC417	>FC416	>FC415					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	RRT	RF	% RSD	CCC	SPCC
2,4,5-Trichlorophenol	.49410	.43824	.47731	.47041	.45140	.865	.46629	4.699		
2-Chloronaphthalene	1.59047	1.34460	1.26890	1.15071	1.12460	.887	1.29585	14.452		
2-Fluorobiphenyl	1.76248	1.48229	1.42008	1.28214	1.23966	.872	1.43733	14.393		
2-Nitroaniline	-	.51995	.52303	.53300	.52414	.926	.52503	1.067		
Dimethylphthalate	2.06628	1.67438	1.49480	1.31217	1.31005	.970	1.57154	20.044		
Acenaphthylene	1.99782	1.63044	1.39910	1.22875	1.13994	.969	1.47921	23.323		
3-Nitroaniline	-	.33221	.35357	.38367	.33114	1.010	.35014	7.031		
Acenaphthene	1.45241	1.20641	1.13968	1.04017	.99181	1.007	1.16610	15.491	*	
2,4-Dinitrophenol	-	.06948	.06174	.14887	.13177	1.029	.10297	42.549		**
4-Nitrophenol	-	.05713	.06914	.09848	.07684	1.053	.07540	23.070		**
Dibenzofuran	2.55754	2.14104	2.01242	1.85901	1.74235	1.039	2.06247	15.287		
2,4-Dinitrotoluene	.45125	.39355	.42463	.44659	.41614	1.059	.42643	5.516		
2,6-Dinitrotoluene	.43795	.39354	.40558	.38857	.39062	.984	.40325	5.080		
Diethylphthalate	2.03244	1.69345	1.49947	1.24908	1.09531	1.109	1.51395	24.419		
4-Chlorophenyl-phenylether	.83817	.66963	.62383	.52841	.45519	1.111	.62305	23.477		
Fluorene	1.26137	1.05688	1.02441	.94352	.86170	1.107	1.02958	14.576		
4-Nitroaniline	-	.20029	.25500	.31927	.24006	1.135	.25366	19.500		
4,6-Dinitro-2-methylphenol	-	.16502	.16403	.16376	.16854	.880	.16534	1.331		
N-Nitrosodiphenylamine	.74402	.72257	.60573	.47959	.50421	.883	.61123	19.843	*	
2,4,6-Tribromophenol	.23450	.19067	.23580	.21903	.23982	.898	.22396	9.029		
4-Bromophenyl-phenylether	.44484	.39490	.39217	.34486	.37992	.934	.39134	9.184		
Hexachlorobenzene	.64025	.54264	.56258	.48276	.50723	.952	.54709	11.067		
Pentachlorophenol	-	.15301	.18653	.20939	.20392	.984	.18821	13.501	*	
Phenanthrene	1.15986	1.03700	.99539	.94259	.97129	1.004	1.02122	8.311		
Anthracene	1.13647	.99329	.97023	.92478	.94233	1.010	.99342	8.471		
Di-n-Butyl phthalate	2.09547	1.98143	1.77297	1.52346	1.61058	1.109	1.79678	13.440		
Fluoranthene	1.08619	.82028	.94138	1.02624	.88356	1.189	.95153	11.229	*	
Pyrene	1.51936	1.81325	1.39629	1.19361	1.44024	.867	1.47255	15.296		
Terphenyl-d14	1.25091	1.39181	1.19941	1.07571	1.23542	.889	1.22865	8.939		
Butylbenzylphthalate	.79090	.97540	.74445	.66323	.79273	.951	.79334	14.437		

RF - Response Factor (Subscript is amount in NG)

$\overline{RRT}$ - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Initial Calibration Data
HSL Compounds

Case No: Willow Grove

Instrument ID: GC/MS#6(F)

Contractor: EA LABORATORIES

Calibration Date: 06/13/89

Contract No: 10388-005

Minimum RF for SPCC is 0.05 Maximum % RSD for CCC is 30.00%

Laboratory ID:	>FC418	>FC414	>FC417	>FC416	>FC415					
	RF	RF	RF	RF	RF					
Compound	20.00	50.00	80.00	120.00	160.00	RRT	RF	% RSD	CCC	SPCC
3,3'-Dichlorobenzidine	.42714	.31799	.45896	.46367	.44777	1.002	.42311	14.281		
Benzo(a)Anthracene	1.30376	1.18404	1.20856	1.19612	1.23322	.998	1.22514	3.883		
bis(2-Ethylhexyl)phthalate	1.20448	1.45733	1.08782	.95039	1.14782	1.012	1.16957	15.951		
Chrysene	1.20293	1.12073	1.04237	.98795	1.02011	1.003	1.07482	8.072		
Di-n-Octyl phthalate	1.41118	1.71456	1.32490	1.16832	1.41782	.947	1.40736	14.142	*	
Benzo(b)Fluoranthene	1.05905	1.27559	1.12122	1.10490	1.29225	.973	1.17060	9.063		
Benzo(k)Fluoranthene	1.15628	.89646	.95010	.86869	.82785	.975	.93988	13.712		
Benzo(a)Pyrene	1.07967	.99801	.99189	.92800	1.01025	.996	1.00157	5.399	*	
Indeno(1,2,3-cd)Pyrene	1.32010	1.13208	1.21665	1.18970	1.22551	1.086	1.21681	5.613		
Dibenzo(a,h)Anthracene	1.04855	.88742	.96533	.94599	.98053	1.087	.96556	5.039		
Benzo(g,h,i)Perylene	1.10636	.94839	.99833	1.02000	1.05076	1.112	1.02477	5.750		

RF - Response Factor (Subscript is amount in NG)

RRT - Average Relative Retention Time (RT Std/RT Istd)

$\overline{RF}$ - Average Response Factor

%RSD - Percent Relative Standard Deviation

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Willow Grove

Calibration Date: 05/30/89

Contractor: EA LABORATORIES

Time: 21:27

Contract No: 10388.03

Laboratory ID: >FC306

Instrument ID: GC/MS#6(F)

Initial Calibration Date: ~~06/10/89~~ 05/26/89 MD 6-11-89

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2-Fluorophenol	1.27221	1.33125	4.64		
Phenol-d5	1.49222	1.66188	11.37		
Phenol	1.63502	1.47710	9.66	*	
bis(2-Chloroethyl)ether	1.59673	1.42168	10.96		
2-Chlorophenol	1.43725	1.37352	4.43		
1,3-Dichlorobenzene	1.48556	1.56575	5.40		
1,4-Dichlorobenzene	1.45057	1.54276	6.36	*	
Benzyl Alcohol	.50652	.33028	34.80		
1,2-Dichlorobenzene	1.36003	1.47194	8.23		
2-Methylphenol	1.26745	1.23752	2.36		
bis(2-Chloroisopropyl)ether	3.40010	2.82568	16.89		
4-Methylphenol	1.08877	1.02544	5.82		
N-Nitroso-Di-n-propylamine	1.27868	.99577	22.13		**
Hexachloroethane	.53519	.57095	6.68		
Nitrobenzene-d5	.38118	.33758	11.44		
Nitrobenzene	.40804	.36072	11.59		
Isophorone	.91495	.79215	13.42		
2-Nitrophenol	.19857	.20054	.99	*	
2,4-Dimethylphenol	.34121	.33358	2.24		
Benzoic Acid	.10882	.12194	12.06		
bis(2-Chloroethoxy)methane	.48722	.44291	9.09		
2,4-Dichlorophenol	.26312	.26319	.03	*	
1,2,4-Trichlorobenzene	.31077	.33993	9.38		
Naphthalene	.82448	.93074	12.89		
4-Chloroaniline	.35330	.32650	7.59		
Hexachlorobutadiene	.19017	.22429	17.94	*	
4-Chloro-3-methylphenol	.28818	.25297	12.22	*	
2-Methylnaphthalene	.52364	.55036	5.10		
Hexachlorocyclopentadiene	.29361	.45494	54.95		**
2,4,6-Trichlorophenol	.40423	.39124	3.21	*	
2,4,5-Trichlorophenol	.41741	.39524	5.31		
2-Chloronaphthalene	1.24797	1.26401	1.29		

RF - Response Factor from daily standard file at 50.00 NG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Wilson Grove

Calibration Date: 05/30/89

Contractor: EA LABORATORIES

Time: 21:27

Contract No: 10388.03

Laboratory ID: >FC306

Instrument ID: GC/MS#6(F)

Initial Calibration Date: ~~06/10/89~~ 05/26/89 6-11-89

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2-Fluorobiphenyl	1.43851	1.49479	3.91		
2-Nitroaniline	.42985	.31059	27.74		
Dimethylphthalate	1.63357	1.64249	.55		
Acenaphthylene	1.69133	1.81239	7.16		
3-Nitroaniline	.19531	.17995	7.87		
Acenaphthene	1.13135	1.16340	2.83	*	
2,4-Dinitrophenol	.05255	.06626	26.10		**
4-Nitrophenol	.06544	.05131	21.59		**
Dibenzofuran	1.46791	1.44628	1.47		
2,4-Dinitrotoluene	.36725	.35801	2.52		
2,6-Dinitrotoluene	.37328	.36409	2.46		
Diethylphthalate	1.38102	1.43404	3.84		
4-Chlorophenyl-phenylether	.58167	.61164	5.15		
Fluorene	.88082	.94052	6.78		
4-Nitroaniline	.14415	.11989	16.83		
4,6-Dinitro-2-methylphenol	.14174	.16141	13.87		
N-Nitrosodiphenylamine	.70032	.66440	5.13	*	
2,4,6-Tribromophenol	.16630	.19923	19.80		
4-Bromophenyl-phenylether	.33580	.33148	1.29		
Hexachlorobenzene	.41489	.47054	13.41		
Pentachlorophenol	.13689	.13899	1.53	*	
Phenanthrene	1.04522	1.01095	3.28		
Anthracene	.99453	.96564	2.90		
Di-n-Butyl phthalate	1.74832	1.88468	7.80		
Fluoranthene	.72294	.74232	2.68	*	
Pyrene	2.01335	1.94623	3.33		
Terphenyl-d14	1.54305	1.51578	1.77		
Butylbenzylphthalate	1.11858	1.02758	8.14		
3,3'-Dichlorobenzidine	.44156	.35940	18.61		
Benzo(a)Anthracene	1.26023	1.23420	2.07		
bis(2-Ethylhexyl)phthalate	1.62347	1.72372	6.18		
Chrysene	1.14483	1.12121	2.06		

RF - Response Factor from daily standard file at 50.00 NG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Winow Grove

Calibration Date: 05/30/89

Contractor: EA LABORATORIES

Time: 21:27

Contract No: 10388.03

Laboratory ID: >FC306

Instrument ID: GC/MS#6(F)

Initial Calibration Date: ~~06/10/89~~ 05/26/89 MD

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Di-n-Octyl phthalate	2.02324	1.88248	6.96	*	
Benzo(b)Fluoranthene	1.20735	1.18256	2.05		
Benzo(k)Fluoranthene	1.08958	.97984	10.07		
Benzo(a)Pyrene	1.05518	1.01629	3.69	*	
Indeno(1,2,3-cd)Pyrene	1.21052	1.03371	14.61		
Dibenzo(a,h)Anthracene	.95994	.84729	11.73		
Benzo(g,h,i)Perylene	1.01861	.86784	14.80		

RF - Response Factor from daily standard file at 50.00 NG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Willow Grove

Calibration Date: 06/13/89

Contractor: EA LABORATORIES

Time: 22:28

Contract No: 1038.05

Laboratory ID: >FC427

Instrument ID: GC/MS#6(F)

Initial Calibration Date: 06/13/89

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2-Fluorophenol	1.14885	1.30764	13.82		
Phenol-d5	1.15665	1.33205	15.16		
Phenol	1.32471	1.53325	15.74	*	
bis(2-Chloroethyl)ether	1.52247	1.58775	4.29		
2-Chlorophenol	1.25562	1.33868	6.62		
1,3-Dichlorobenzene	1.58036	1.51728	3.99		
1,4-Dichlorobenzene	1.51581	1.49207	1.57	*	
Benzyl Alcohol	.92946	.67841	27.01		
1,2-Dichlorobenzene	1.35325	1.38349	2.23		
2-Methylphenol	1.07051	1.12849	5.42		
bis(2-Chloroisopropyl)ether	3.20015	3.13805	1.94		
4-Methylphenol	.95818	.82171	14.24		
N-Nitroso-Di-n-propylamine	1.19714	1.09852	8.24		**
Hexachloroethane	.58565	.55562	5.13		
Nitrobenzene-d5	.34522	.34600	.23		
Nitrobenzene	.39138	.38237	2.30		
Isophorone	.88499	.80622	8.90		
2-Nitrophenol	.19961	.19646	1.58	*	
2,4-Dimethylphenol	.33428	.30206	9.64		
Benzoic Acid	.12273	.10079	17.88		
bis(2-Chloroethoxy)methane	.49127	.48512	1.25		
2,4-Dichlorophenol	.26748	.26220	1.97	*	
1,2,4-Trichlorobenzene	.37156	.33747	9.17		
Naphthalene	.86046	.87020	1.13		
4-Chloroaniline	.48093	.40494	15.80		
Hexachlorobutadiene	.26549	.22042	16.98	*	
4-Chloro-3-methylphenol	.25566	.25212	1.39	*	
2-Methylnaphthalene	.71300	.65671	7.89		
Hexachlorocyclopentadiene	.50082	.32005	36.09		**
2,4,6-Trichlorophenol	.42545	.40727	4.27	*	
2,4,5-Trichlorophenol	.46629	.39423	15.45		
2-Chloronaphthalene	1.29585	1.22733	5.29		

RF - Response Factor from daily standard file at 50.00 NG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Willow Grove

Calibration Date: 06/13/89

Contractor: EA LABORATORIES

Time: 22:28

Contract No: 10388-05

Laboratory ID: >FC427

Instrument ID: GC/MS#6(F)

Initial Calibration Date: 06/13/89

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
2-Fluorobiphenyl	1.43733	1.39863	2.69		
2-Nitroaniline	.52503	.45792	12.78		
Dimethylphthalate	1.57154	1.52891	2.71		
Acenaphthylene	1.47921	1.46972	.64		
3-Nitroaniline	.35014	.31344	10.48		
Acenaphthene	1.16610	1.13026	3.07	*	
2,4-Dinitrophenol	.10297	.10415	1.15		**
4-Nitrophenol	.07540	.07013	6.99		**
Dibenzofuran	2.06247	1.83069	11.24		
2,4-Dinitrotoluene	.42643	.40286	5.53		
2,6-Dinitrotoluene	.40325	.36421	9.68		
Diethylphthalate	1.51395	1.59231	5.18		
4-Chlorophenyl-phenylether	.62305	.63401	1.76		
Fluorene	1.02958	1.02386	.56		
4-Nitroaniline	.25366	.24579	3.10		
4,6-Dinitro-2-methylphenol	.16534	.16160	2.26		
N-Nitrosodiphenylamine	.61123	.61661	.88	*	
2,4,6-Tribromophenol	.22396	.20207	9.78		
4-Bromophenyl-phenylether	.39134	.34250	12.48		
Hexachlorobenzene	.54709	.46452	15.09		
Pentachlorophenol	.18821	.16655	11.51	*	
Phenanthrene	1.02122	.96660	5.35		
Anthracene	.99342	.93672	5.71		
Di-n-Butyl phthalate	1.79678	1.77596	1.16		
Fluoranthene	.95153	.99040	4.08	*	
Pyrene	1.47255	1.16056	21.19		
Terphenyl-d14	1.22865	1.01301	17.55		
Butylbenzylphthalate	.79334	.60548	23.68		
3,3'-Dichlorobenzidine	.42311	.35001	17.28		
Benzo(a)Anthracene	1.22514	1.09468	10.65		
bis(2-Ethylhexyl)phthalate	1.16957	.96031	17.89		
Chrysene	1.07482	.92946	13.52		

RF - Response Factor from daily standard file at 50.00 NG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

Continuing Calibration Check
HSL Compounds

Case No: Willow Grove

Calibration Date: 06/13/89

Contractor: EA LABORATORIES

Time: 22:28

Contract No: 10388-05

Laboratory ID: >FC427

Instrument ID: GC/MS#6(F)

Initial Calibration Date: 06/13/89

Minimum $\overline{RF}$ for SPCC is 0.05

Maximum % Diff for CCC is 25.00%

Compound	$\overline{RF}$	RF	%Diff	CCC	SPCC
Di-n-Octyl phthalate	1.40736	1.15331	18.05	*	
Benzo(b)Fluoranthene	1.17060	.98266	16.06		
Benzo(k)Fluoranthene	.93988	.93888	.11		
Benzo(a)Pyrene	1.00157	.90088	10.05	*	
Indeno(1,2,3-cd)Pyrene	1.21681	1.06362	12.59		
Dibenzo(a,h)Anthracene	.96556	.82786	14.26		
Benzo(g,h,i)Perylene	1.02477	.89248	12.91		

RF - Response Factor from daily standard file at 50.00 NG

$\overline{RF}$ - Average Response Factor from Initial Calibration Form VI

%Diff - % Difference from original average or curve

CCC - Calibration Check Compounds (*) SPCC - System Performance Check Compounds (**)

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES

Contract: Willow Grove / ~~Michaelsville~~ SEH

Lab Code: EAENG Case No.:

SAS No.: . SDG No.: .

Lab File ID (Standard): >FC 30L

Date Analyzed: 5-30-89

Instrument ID: F6

Time Analyzed: 21:27

	IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
12 HOUR STD	97603	7.50	372765	10.92	161767	16.33
UPPER LIMIT	195206	8.00	745530	11.42	343534	16.83
LOWER LIMIT	48802	7.00	186383	10.42	85884	15.83
EPA SAMPLE NO.						
01 BLANK #713 (>FC307)	95256	7.51	367658	10.92	158250	16.32
02 BLANK #710 (>FC308)	92523	7.49	344007	10.91	146763	16.31
03 EA#2155 (>FC309)	97211	7.54	394539	10.96	155218	16.35
04 EA#2157 (>FC310)	98471	7.51	365656	10.92	159645	16.31
05 EA#2158 (>FC311)	94383	7.49	349569	10.90	150674	16.31
06 BLANK #696 (>FC312)	104668	7.50	396741	10.91	174957	16.32
07 EA#2087 (>FC313)	105015	7.51	392524	10.92	171184	16.31
08 EA#2089 (>FC314)	108888	7.51	423571	10.93	186013	16.32
09 EA#2091 (>FC315)	103850	7.50	370030	10.92	163681	16.32
10 ~~EA#2148 (>FC316)~~	~~99551~~	~~7.50~~	~~358331~~	~~10.92~~	~~148472~~	~~16.32~~
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-1

1/87 Rev.

8C
SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove / ~~Mitchelville~~ JET

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Lab File ID (Standard): >FC 306 Date Analyzed: 5-30-89

Instrument ID: F6 Time Analyzed: 21:27

	IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
12 HOUR STD	156503	20.96	53024	29.28	56758	32.96
UPPER LIMIT	313006	21.46	106048	29.78	113516	33.46
LOWER LIMIT	78252	20.46	26512	28.78	28379	32.46
EPA SAMPLE NO.						
01 BLANK #713 (>FC307)	154322	20.95	57594	29.28	63040	32.96
02 BLANK #710 (>FC308)	149603	20.95	55137	29.28	57117	32.96
03 EA#2155 (>FC309)	152513	21.00	55672	29.31	58911	32.99
04 EA#2157 (>FC310)	156872	20.95	53534	29.28	56860	32.96
05 EA#2158 (>FC311)	147224	20.95	56923	29.28	60059	32.96
06 BLANK #696 (>FC312)	168014	20.95	55532	29.28	58725	32.96
07 EA#2087 (>FC313)	168086	20.96	54309	29.28	57586	32.96
08 EA#2089 (>FC314)	182099	20.96	62878	29.28	66230	32.96
09 EA#2091 (>FC315)	155308	20.96	53830	29.27	60457	32.96
10 EA#2148 (>FC316)	146701	20.95	50152	29.28	57575	32.95
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal stansard ar a.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-2

1/87 Rev.

8B

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: SAS No.: . SDG No.: .

Lab File ID (Standard): FC 414 Date Analyzed: 6-13-89

Instrument ID: FL Time Analyzed: 10:26

	IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
12 HOUR STD	57841	7.02	192176	10.36	80015	15.70
UPPER LIMIT	103682	7.52	384352	10.86	160030	16.20
LOWER LIMIT	25921	6.52	96088	9.86	40008	15.20
EPA SAMPLE NO.						
Comp NSLB-Y 01	EA#2083 (SEC 418)	59981	204562	10.35	82272	15.69
02	EA#2095 (NSLB-5 Comp)	56133	188740	10.34	79561	15.70
03	~~EA#2097 (NSLB-6 Comp)~~	~~52555~~	~~184325~~	~~10.36~~	~~77841~~	~~15.65~~
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-1

1/87 Rev.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES

Contract: Willow Grove

Lab Code: EAENG Case No.:

SAS No.: . SDG No.: .

Lab File ID (Standard): >FC 414

Date Analyzed: 6-13-89

Instrument ID: F6

Time Analyzed: 10:21

	IS4(PHN) AREA	#	RT	IS5(CRY) AREA	#	RT	IS6(PRY) AREA	#	RT
12 HOUR STD	78739		20.29	31895		28.62	34601		32.25
UPPER LIMIT	157478		20.79	63790		29.12	69202		32.75
LOWER LIMIT	39370		19.79	15948		28.12	17301		31.75
EPA SAMPLE NO.									
NSLB-4 Comp 01	~~EA#2093~~ (>FC414)		20.30	50212		28.62	61789		32.25
02	~~EA#2095~~ (NSLB-3 Comp)		20.28	48425		28.61	57938		32.24
03	~~EA#2097~~ (NSLB-5 Comp)		~~20.28~~	~~60086~~		~~28.62~~	~~29648~~ *		~~32.26~~
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard ar a.

Column used to flag internal standard area values with an ast ri k

page 1 of 1

FORM VIII SV-2

1/87 Rev.

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: SAS No.: SDG No.:

Lab File ID (Standard): >FC427 STD#1399 Date Analyzed: 6/13/89

Instrument ID: #6(F) Time Analyzed: 22:28

	IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
12 HOUR STD	56112	7.02	199933	10.36	84713	15.70
UPPER LIMIT	112224	7.52	399866	10.86	169426	16.20
LOWER LIMIT	28056	6.52	99967	9.86	42357	15.20
EPA SAMPLE ID.						
2097 01 NSLB-6 Comp	47865	7.00	164930	10.36	66319	15.68
~~2104 02 Dup (ms)~~	~~54093~~	~~7.00~~	~~183091~~	~~10.35~~	~~74709~~	~~15.69~~
2104(ms) 03 Dup (ms) MS	50718	7.01	181739	10.35	78370	15.68
2104(msd) 04 Dup (ms) MSD	46676	7.01	161992	10.35	70031	15.68
2104 05 Dup NSL #1	52636	6.99	184407	10.35	75268	15.68
2106 06 FTAB-1 Comp	46194	6.99	159674	10.34	59697	15.68
2108 07 FTAB-2 Comp	44843	6.99	155630	10.35	63175	15.68
08 MSTD #369	45422	7.00	165479	10.34	67776	15.69
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-1 4 214 1/87 Rev.

3C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: SAS No.: SDG No.

Lab File ID (Standard): >FC427 ~~6/13/89~~ STD#1399 Date Analyzed: 6/13/89

Instrument ID: #6 (F) Time Analyzed: 22:28

		IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
	12 HOUR STD	101309	20.29	80026	28.62	95806	32.25
	UPPER LIMIT	202618	20.79	160052	29.12	191612	32.75
	LOWER LIMIT	50655	19.79	40013	28.12	47903	31.75
	EPA SAMPLE NO.						
2097 01	NSLB-6 Comp	67527	20.28	39172 *	28.60	50214	32.25
~~2103 02~~	~~Dup (ms)~~	~~82251~~	~~20.28~~	~~49358~~	~~28.61~~	~~62326~~	~~32.24~~
2104ms 03	Dup (ms) ms	89604	20.27	56800	28.60	74671	32.23
2104msd 04	Dup (ms) MSD	75514	20.27	45758	28.60	57657	32.23
2104 05	Dup PSL #1	86759	20.27	61588	28.61	80560	32.25
2106 06	FTAB-1 Comp	61376	20.27	39781 *	28.61	51325	32.25
2108 07	FTAB-2 Comp	64754	20.27	37491 *	28.60	46470 *	32.24
08	MSTD #369	71277	20.28	38499 *	28.61	47409 *	32.24
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-2 1/87 Rev.

SB

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES

Contract: Willow Grove

Lab Code: EAENG

Case No.:

SAS No.:

SDG No.:

Lab File ID (Standard): > FC444 STD # 1399

Date Analyzed: 6/15/89

Instrument ID: #6 (F)

Time Analyzed: 18:49

	IS1(DCB) AREA #	RT	IS2(NPT) AREA #	RT	IS3(ANT) AREA #	RT
12 HOUR STD	67152	6.98	274803	10.32	118906	15.66
UPPER LIMIT	134304	7.48	549606	10.82	237812	16.16
LOWER LIMIT	33576	6.48	137402	9.82	59453	15.16
EPA SAMPLE NO.						
01 MSTD0#370	55093	6.96	206586	10.30	87883	15.64
02 BLANK #698	55302	6.96	193305	10.30	83536	15.63
2099 03 RINSATE#1 9SL	51452	6.96	181001	10.30	76899	15.63
2099 04 RINSATE#2 9SL	59821	6.96	212469	10.30	88431	15.65
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IS1 (DCB) = 1,4-Dichlorobenzene-d4
IS2 (NPT) = Naphthalene-d8
IS3 (ANT) = Acenaphthene-d8

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard area.

Column used to flag internal standard area values with an asterisk

FORM VIII SV-1

1/87 Rev.

8C

SEMIVOLATILE INTERNAL STANDARD AREA SUMMARY

Lab Name: EA LABORATORIES Contract: Willow Grove

Lab Code: EAENG Case No.: SAS No.: . SDG No.

Lab File ID (Standard): 7FC444 STD # 1399 Date Analyzed: 6/15/89

Instrument ID: #6(F) Time Analyzed: 18:49

	IS4(PHN) AREA #	RT	IS5(CRY) AREA #	RT	IS6(PRY) AREA #	RT
12 HOUR STD	119154	20.23	64105	28.56	69069	32.21
UPPER LIMIT	238308	20.73	128210	29.06	138138	32.71
LOWER LIMIT	59577	19.73	32053	28.06	34535	31.71
EPA SAMPLE NO.						
01 MS TOD# 370	94946	20.23	54441	28.56	65908	32.19
02 BLANK #698	47605	20.22	68287	28.56	84087	32.19
03 RINSATE #1 9SL	78481	20.22	36188	28.56	39619	32.19
04 RINSATE #2 9SL	96250	20.23	47955	28.56	54681	32.19
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IS4 (PHN) = Phenanthrene-d10
IS5 (CRY) = Chrysene-d12
IS6 (PRY) = Perylene-d12

UPPER LIMIT = + 100% of internal stansard area.
LOWER LIMIT = - 50% of internal standard ar a.

Column used to flag internal standard area value with an asterisk

FORM VIII SV-2 4 217 87 R v.

D. Raw QC Data

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
BLANK #696

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

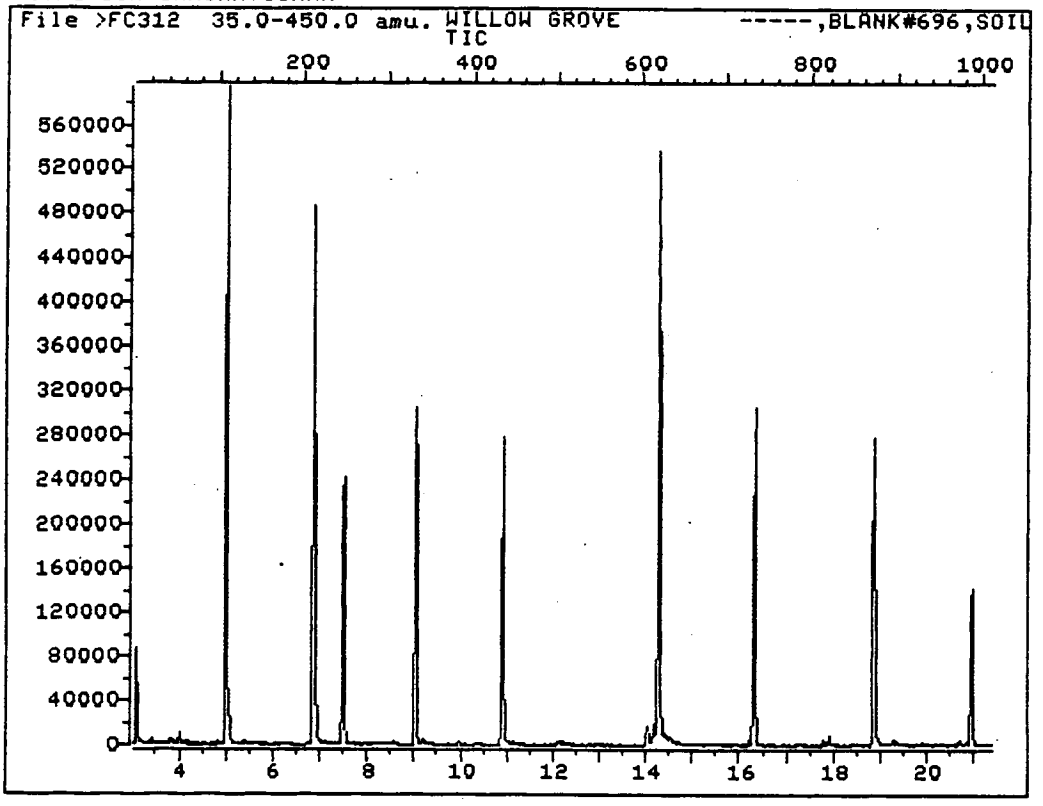
Concentration: Low Medium (Circle One)
Date Extracted: 05/05/89
Date Analyzed: 5/31/89 3:30
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup Yes ✓No
Separatory Funnel Extraction Yes
Continuous Liquid-Liquid Extraction ✓Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	970.	U	83-32-9	Acenaphthene	970.	U
111-44-4	bis(2-Chloroethyl)ether	970.	U	51-28-5	2,4-Dinitrophenol	4900.	U
95-57-8	2-Chlorophenol	970.	U	100-02-7	4-Nitrophenol	4900.	U
541-73-1	1,3-Dichlorobenzene	970.	U	132-64-9	Dibenzofuran	970.	U
106-46-7	1,4-Dichlorobenzene	970.	U	121-14-2	2,4-Dinitrotoluene	970.	U
100-51-6	Benzyl Alcohol	970.	U	606-20-2	2,6-Dinitrotoluene	970.	U
95-50-1	1,2-Dichlorobenzene	970.	U	84-66-2	Diethylphthalate	970.	U
95-48-7	2-Methylphenol	970.	U	7005-72-3	4-Chlorophenyl-phenylether	970.	U
39638-32-9	bis(2-Chloroisopropyl)ether	970.	U	86-73-7	Fluorene	970.	U
106-44-5	4-Methylphenol	970.	U	100-01-6	4-Nitroaniline	970.	U
621-64-7	N-Nitroso-Di-n-propylamine	970.	U	534-52-1	4,6-Dinitro-2-methylphenol	4900.	U
67-72-1	Hexachloroethane	970.	U	86-30-6	N-Nitrososdiphenylamine (1)	970.	U
98-95-3	Nitrobenzene	970.	U	101-55-3	4-Bromophenyl-phenylether	970.	U
78-59-1	Isophorone	970.	U	118-74-1	Hexachlorobenzene	970.	U
88-75-5	2-Nitrophenol	970.	U	87-86-5	Pentachlorophenol	4900.	U
105-67-9	2,4-Dimethylphenol	970.	U	85-01-8	Phenanthrene	970.	U
65-85-0	Benzoic Acid	4900.	U	120-12-7	Anthracene	970.	U
111-91-1	bis(2-Chloroethoxy)methane	970.	U	84-74-2	Di-n-Butyl phthalate	970.	U
120-83-2	2,4-Dichlorophenol	970.	U	206-44-0	Fluoranthene	970.	U
120-82-1	1,2,4-Trichlorobenzene	970.	U	129-00-0	Pyrene	970.	U
91-20-3	Naphthalene	970.	U	85-68-7	Butylbenzylphthalate	970.	U
106-47-8	4-Chloroaniline	970.	U	91-94-1	3,3'-Dichlorobenzidine	1900.	U
87-68-3	Hexachlorobutadiene	970.	U	56-55-3	Benzo(a)Anthracene	970.	U
59-50-7	4-Chloro-3-methylphenol	970.	U	117-81-7	bis(2-Ethylhexyl)phthalate	970.	U
91-57-6	2-Methylnaphthalene	970.	U	218-01-9	Chrysene	970.	U
77-47-4	Hexachlorocyclopentadiene	970.	U	117-84-0	Di-n-Octyl phthalate	970.	U
88-06-2	2,4,6-Trichlorophenol	970.	U	205-99-2	Benzo(b)Fluoranthene	970.	U
95-95-4	2,4,5-Trichlorophenol	4900.	U	207-08-9	Benzo(k)Fluoranthene	970.	U
91-58-7	2-Chloronaphthalene	970.	U	50-32-8	Benzo(a)Pyrene	970.	U
88-74-4	2-Nitroaniline	4900.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	970.	U
131-11-3	Dimethylphthalate	970.	U	53-70-3	Dibenzo(a,h)Anthracene	970.	U
208-96-8	Acenaphthylene	970.	U	191-24-2	Benzo(g,h,i)Perylene	970.	U
99-09-2	3-Nitroaniline	4900.	U				

(1)-Cannot be separated from diphenylamine

TOTAL ION CHROMATOGRAM



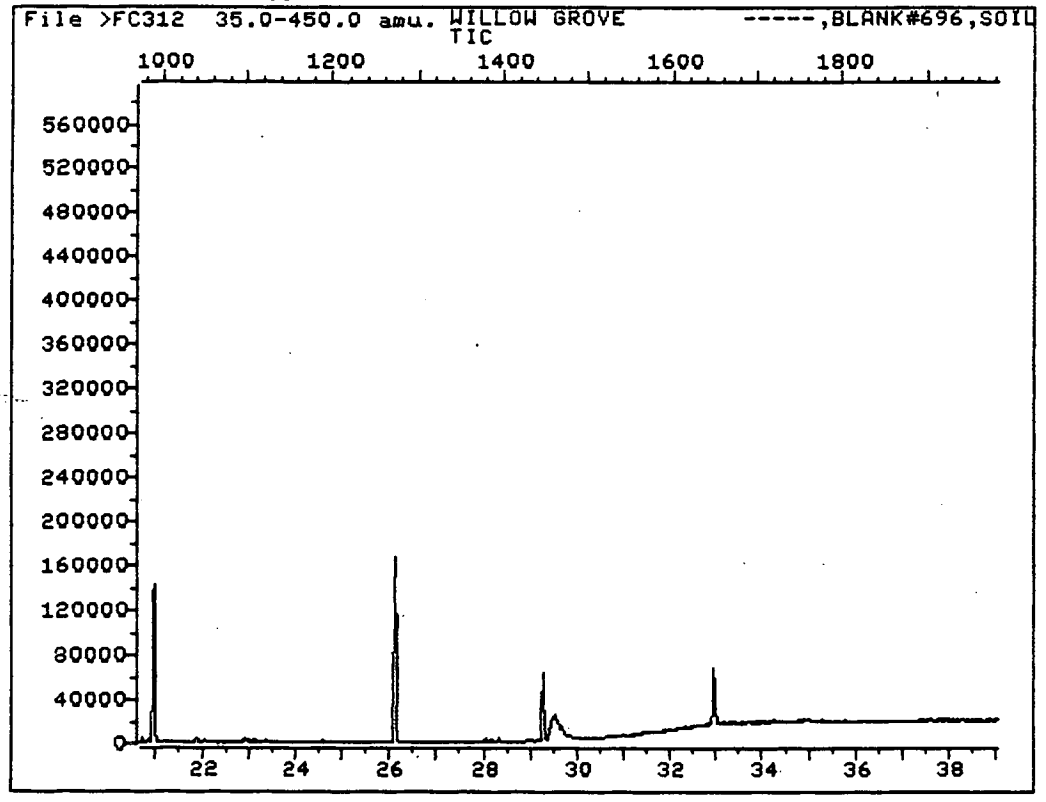
Data File: >FC312::D5 Quant Output File: ^FC312::QT
Name: WILLOW GROVE
Misc: -----,BLANK#696,SOIL,10.30g,1mL,BL#696FOR2086-2106 BTL# 6

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 04:12
Injected at: 890531 03:30

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC312::D5 Quant Output File: ^FC312::QT
Name: WILLOW GROVE
Misc: -----,BLANK#696,SOIL,10.30g,1mL,BL#696FOR2086-2106 BTL# 6

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 04:12
Injected at: 890531 03:30

TIC page 2 of 2

QUANT REPORT

Op rator ID: UNCLE
Output File: ^FC312::QT
Data File: >FC312::D5
Name: WILLOW GROVE
Misc: -----,BLANK#696,SOIL,10.30g,1mL,BL#696FOR2086-2106

Quant R v: 6

Quant Time: 890531 04:12
Injected at: 890531 03:30
Dilution Factor: 1.00000

BTL# 6

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.50	152.0	104668	40.00	NG	94
2)	2-Fluorophenol	4.99	112.0	342924	98.44	NG 49%	84
3)	Phenol-d5	6.86	99.0	495368	113.91	NG 57%	93
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	7.12	128.0	610	~~17~~	NG	95
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	H xachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.91	136.0	396741	40.00	NG	86
17)	Nitrobenzene-d5	9.04	82.0	242343	72.38	NG 72%	92
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	10.40	122.0	600	~~.50~~	NG	92
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	16.32	164.0	174957	40.00	NG	93
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	14.29	172.0	465103	71.14	NG 71%	95
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	16.32	163.0	57904	~~8.06~~	NG	52
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
pag 2

Output File:^FC312:: Data File:>FC312::D5

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	17.99	149.0	1925	~~.31~~	NG	97
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.95	188.0	168014	40.00	NG	99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.86	329.9	116265	138.93	NG 69%	90
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	23.13	149.0	3391	~~.43~~	NG	98
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	29.28	240.0	55532	40.00	NG	97
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	26.14	244.0	179951	85.51	NG 86%	87
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	29.55	149.0	1176	~~.49~~	NG	97
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.96	264.0	58729	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
BLANK#698,WIL Low Grove

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/04/89
Date Analyzed: 6/16/89 0:40
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

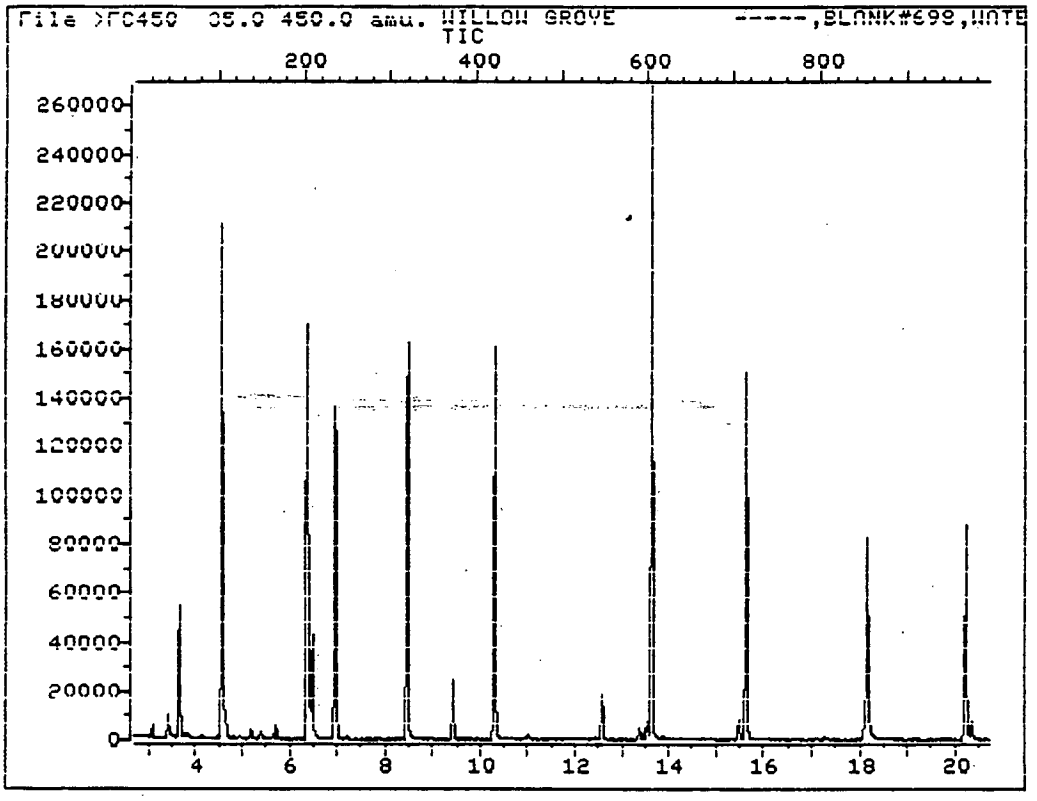
GPC Cleanup __ Yes No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl Alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic Acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
99-09-2	3-Nitroaniline	50.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	10.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrososdiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-Butyl phthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)Anthracene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
218-01-9	Chrysene	10.	U
117-84-0	Di-n-Octyl phthalate	10.	U
205-99-2	Benzo(b)Fluoranthene	10.	U
207-08-9	Benzo(k)Fluoranthene	10.	U
50-32-8	Benzo(a)Pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.	U
53-70-3	Dibenzo(a,h)Anthracene	10.	U
191-24-2	Benzo(g,h,i)Perylene	10.	U

(1)-Cannot be separated from diphenylamine

TOTAL ION CHROMATOGRAM



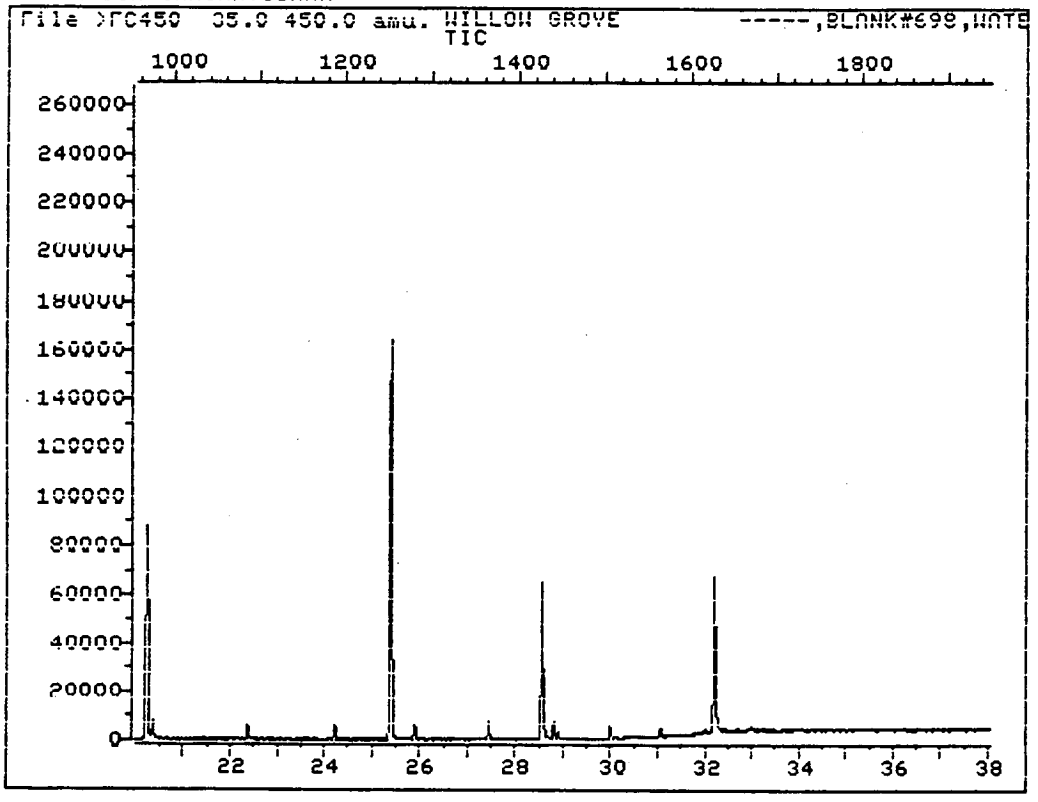
Data File: >FC450::D5 Quant Output File: ^FC450::QT
Name: WILLOW GROVE
Misc: -----,BLANK#698,WATER,1000mL,2mL BTL# 6

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890615 20:13

Operator ID: UNCLE
Quant Time: 890616 01:21
Injected at: 890616 00:40

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC450::D5 Quant Output File: ^FC450::QT
Name: WILLOW GROVE
Misc: -----,BLANK#698,WATER,1000mL,2mL BTL# 6

Id File: IDFCLP::8D
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890615 20:13

Operator ID: UNCLE
Quant Time: 890616 01:21
Injected at: 890616 00:40

TIC page 2 of 2

QUANT REPORT

ID: UNCLE Quant Rev: 6 Quant Time: 890616 01:21
ile: ^FC450::QT Injected at: 890616 00:40
e: >FC450::D5 Dilution Factor: 1.00000
LLOW GROVE
---,BLANK#698,WATER,1000mL,2mL BTL# 6

IDFCLP::BD
SL BNA LIST---INSTRUMENT #6(F)
ibration: 890615 20:13

Compound	R.T.	Q ion	Area	Conc	Units	q
-1,4-Dichlorobenzene	6.96	152.0	55302	40.00	NG	96
Fluorophenol	4.56	112.0	101775	55.52	NG ✓28%	90
enol-d5	6.36	99.0	140493	66.33	NG ✓33%	93
enol	0.00	94.0	0	0.00	NG	
s(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
Chlorophenol	0.00	128.0	0	0.00	NG	
3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
nzyl Alcohol	0.00	108.0	0	0.00	NG	
2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
Methylphenol	0.00	108.0	0	0.00	NG	
s(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
Methylph nol	0.00	108.0	0	0.00	NG	
Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
xachloroethane	0.00	117.0	0	0.00	NG	
-Naphthalene	10.30	136.0	193305	40.00	NG	87
trobenzene-d5	8.48	82.0	122567	67.59	NG ✓68%	90
trobenzene	0.00	77.0	0	0.00	NG	
ophorone	0.00	82.0	0	0.00	NG	
Nitrophenol	0.00	139.0	0	0.00	NG	
4-Dimethylphenol	0.00	107.0	0	0.00	NG	
nzoic Acid	0.00	122.0	0	0.00	NG	
s(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
4-Dichlorophenol	0.00	162.0	0	0.00	NG	
2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
phthalene	0.00	128.0	0	0.00	NG	
Chloroanilin	0.00	127.0	0	0.00	NG	
xachlorobutadiene	0.00	224.7	0	0.00	NG	
Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
Methylnaphthalene	0.00	142.0	0	0.00	NG	
.0-Acenaphthene	15.63	164.0	83536	40.00	NG	93
xachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
Chloronaphthalene	0.00	162.0	0	0.00	NG	
Fluorobiphenyl	13.63	172.0	237918	83.22	NG ✓83%	95
Nitroanilin	0.00	65.0	0	0.00	NG	
methylphthalate	15.65	163.0	28681	~~8.61 NG~~		53
enaphthylene	0.00	152.0	0	0.00	NG	
Nitroaniline	0.00	138.0	0	0.00	NG	
enaphthene	0.00	153.0	0	0.00	NG	
,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FC450:: Data File:>FC450::D5

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.22	188.0	97605	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.15	329.9	40857	110.01	NG ✓55%	98
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Ph nanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	28.56	240.0	68287	40.00	NG	95
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	25.41	244.0	184142	100.15	NG ✓100%	86
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	28.91	149.0	1662	.64 ~~NG~~		98
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.19	264.0	84087	40.00	NG	94
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
BLANK#710

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/05/89
Date Analyzed: 5/30/89 23:56
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

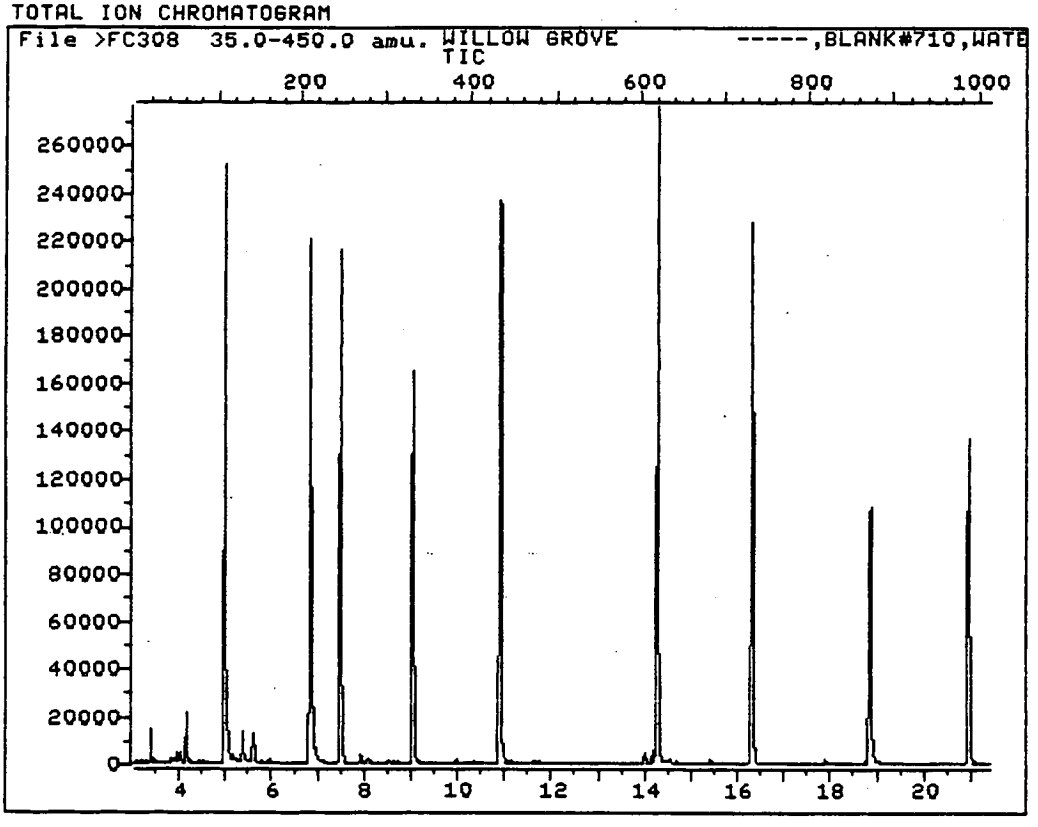
GPC Cleanup Yes ✓No
Separatory Funnel Extraction Yes
Continuous Liquid-Liquid Extraction ✓Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl Alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
39638-32-9	bis(2-chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-Di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic Acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
99-09-2	3-Nitroaniline	50.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	10.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrososdiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-Butyl phthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)Anthracene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
218-01-9	Chrysene	10.	U
117-84-0	Di-n-Octyl phthalate	10.	U
205-99-2	Benzo(b)Fluoranthene	10.	U
207-08-9	Benzo(k)Fluoranthene	10.	U
50-32-8	Benzo(a)Pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	10.	U
53-70-3	Dibenzo(a,h)Anthracene	10.	U
191-24-2	Benzo(g,h,i)Perylene	10.	U

(1)-Cannot be separated from diphenylamine

TOTAL ION CHROMATOGRAM



Data File: >FC308::D4 Quant Output File: ^FC308::QT
Name: WILLOW GROVE
Misc: -----,BLANK#710,WATER,1000mL,2mL, BL#710FOR2158&2148 BTL# 2

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 00:38
Injected at: 890530 23:56

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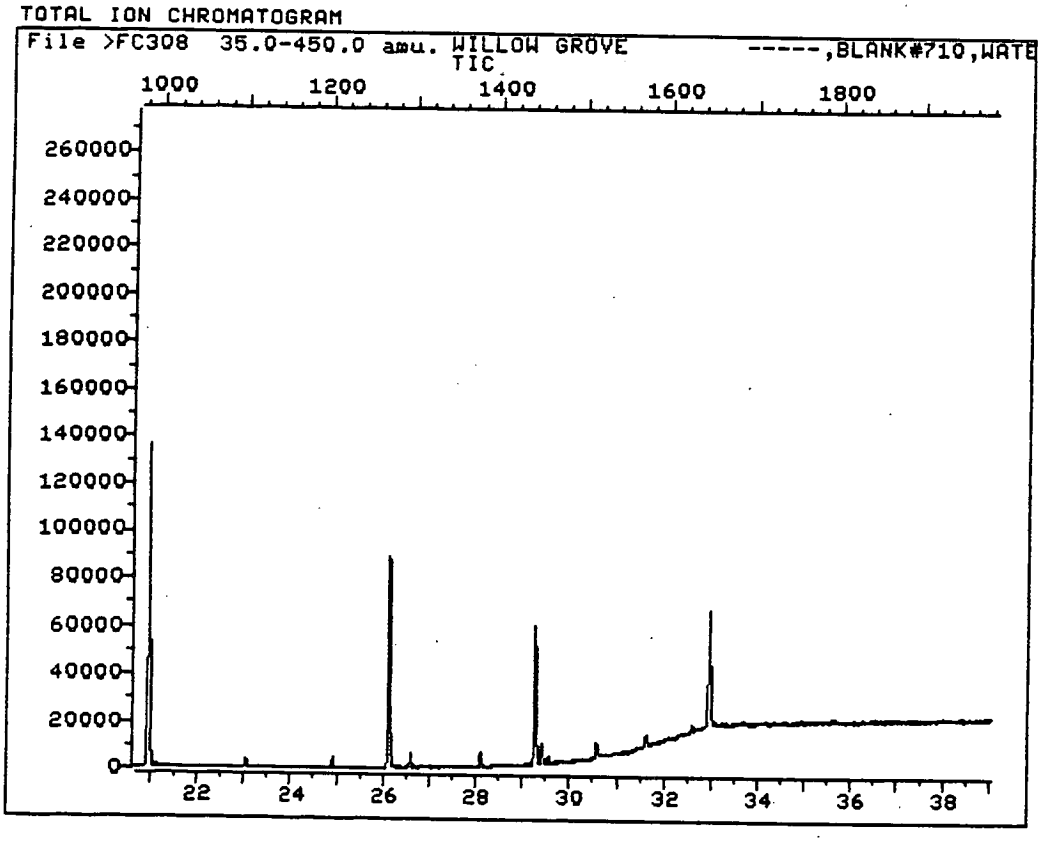
TOTAL ION CHROMATOGRAM



Data File: >FC308::D4 Quant Output File: ^FC308::QT
Name: WILLOW GROVE
Misc: -----,BLANK#710,WATER,1000mL,2mL, BL#710FOR2158 BTL# 2

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
La t Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 00:38
Injected at: 890530 23:56

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QUANT REPORT

Operator ID: UNCLE Quant R v: 6 Quant Time: 890531 00:38
Output File: ^FC308::QT Injected at: 890530 23:56
Data File: >FC308::D4 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: -----,BLANK#710,WATER,1000mL,2mL, BL#710FOR2158 & 2148 BTL# 2

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.49	152.0	92523	40.00	NG	94
2)	2-Fluorophenol	4.99	112.0	159509	51.80	NG 52%	94
3)	Phenol-d5	6.84	99.0	188774	49.11	NG 49%	87
4)	Phenol	0.00	94.0	0	0.00	NG	
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	0.00	128.0	0	0.00	NG	
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG	
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG	
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG	
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.91	136.0	344007	40.00	NG	86
17)	Nitrobenzene-d5	9.04	82.0	117370	40.43	NG 81%	91
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	0.00	122.0	0	0.00	NG	
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG	
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	H xachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG	
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	16.31	164.0	146763	40.00	NG	93
32)	H xachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	14.28	172.0	233789	42.63	NG 85%	95
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	16.33	163.0	49361	~~8.19~~	NG	53
39)	Acenaphthylene	0.00	152.0	0	0.00	NG	
40)	3-Nitroanilin	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	0.00	153.0	0	0.00	NG	
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FC308:: Data File:>FC308::D4

	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.95	188.0	149603	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.85	329.9	50492	67.76	NG 68%	95
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	29.28	240.0	55137	40.00	NG	98
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	26.12	244.0	104749	50.13	NG 100%	84
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	29.56	149.0	1603	~~.67~~	NG	96
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.96	264.0	57117	40.00	NG	93
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
BLANK#713

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

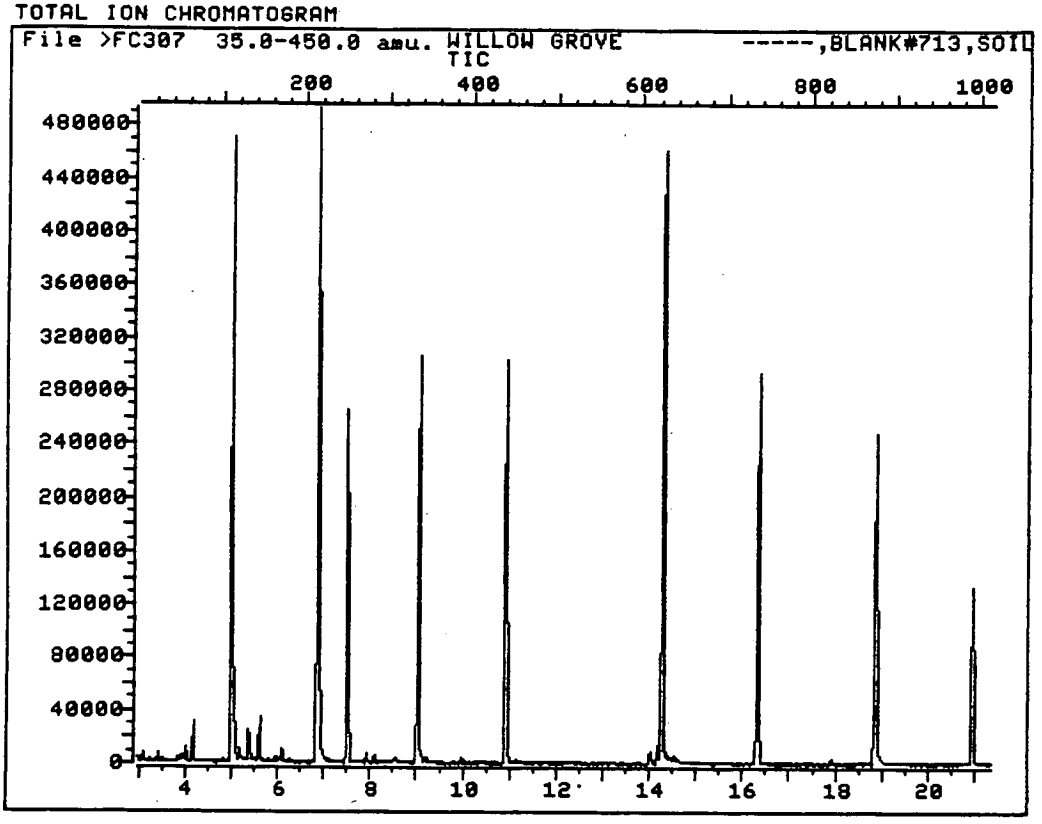
Concentration: Low Medium (Circle One)
Date Extracted: 05/05/89
Date Analyzed: 5/30/89 23:03
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup _ Yes ✓ No
Separatory Funnel Extraction _ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

C.A.S. Number		ug/L or ug/Kg (Circle One)		C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	980.	U	83-32-9	Acenaphthene	980.	U
111-44-4	bis(2-Chloroethyl)ether	980.	U	51-28-5	2,4-Dinitrophenol	4900.	U
95-57-8	2-Chlorophenol	980.	U	100-02-7	4-Nitrophenol	4900.	U
541-73-1	1,3-Dichlorobenzene	980.	U	132-64-9	Dibenzofuran	980.	U
106-46-7	1,4-Dichlorobenzene	980.	U	121-14-2	2,4-Dinitrotoluene	980.	U
100-51-6	Benzyl Alcohol	980.	U	606-20-2	2,6-Dinitrotoluene	980.	U
95-50-1	1,2-Dichlorobenzene	980.	U	84-66-2	Diethylphthalate	980.	U
95-48-7	2-Methylphenol	980.	U	7005-72-3	4-Chlorophenyl-phenylether	980.	U
39638-32-9	bis(2-Chloroisopropyl)ether	980.	U	86-73-7	Fluorene	980.	U
106-44-5	4-Methylphenol	980.	U	100-01-6	4-Nitroaniline	980.	U
621-64-7	N-Nitroso-Di-n-propylamine	980.	U	534-52-1	4,6-Dinitro-2-methylphenol	4900.	U
67-72-1	Hexachloroethane	980.	U	86-30-6	N-Nitrososdiphenylamine (1)	980.	U
98-95-3	Nitrobenzene	980.	U	101-55-3	4-Bromophenyl-phenylether	980.	U
78-59-1	Isophorone	980.	U	118-74-1	Hexachlorobenzene	980.	U
88-75-5	2-Nitrophenol	980.	U	87-86-5	Pentachlorophenol	4900.	U
105-67-9	2,4-Dimethylphenol	980.	U	85-01-8	Phenanthrene	980.	U
65-85-0	Benzoic Acid	4900.	U	120-12-7	Anthracene	980.	U
111-91-1	bis(2-Chloroethoxy)methane	980.	U	84-74-2	Di-n-Butyl phthalate	980.	U
120-83-2	2,4-Dichlorophenol	980.	U	206-44-0	Fluoranthene	980.	U
120-82-1	1,2,4-Trichlorobenzene	980.	U	129-00-0	Pyrene	980.	U
91-20-3	Naphthalene	980.	U	85-68-7	Butylbenzylphthalate	980.	U
106-47-8	4-Chloroaniline	980.	U	91-94-1	3,3'-Dichlorobenzidine	2000.	U
87-68-3	Hexachlorobutadiene	980.	U	56-55-3	Benzo(a)Anthracene	980.	U
59-50-7	4-Chloro-3-methylphenol	980.	U	117-81-7	bis(2-Ethylhexyl)phthalate	120.	J
91-57-6	2-Methylnaphthalene	980.	U	218-01-9	Chrysene	980.	U
77-47-4	Hexachlorocyclopentadiene	980.	U	117-84-0	Di-n-Octyl phthalate	980.	U
88-06-2	2,4,6-Trichlorophenol	980.	U	205-99-2	Benzo(b)Fluoranthene	980.	U
95-95-4	2,4,5-Trichlorophenol	4900.	U	207-08-9	Benzo(k)Fluoranthene	980.	U
91-58-7	2-Chloronaphthalene	980.	U	50-32-8	Benzo(a)Pyrene	980.	U
88-74-4	2-Nitroaniline	4900.	U	193-39-5	Indeno(1,2,3-cd)Pyrene	980.	U
131-11-3	Dimethylphthalate	980.	U	53-70-3	Dibenzo(a,h)Anthracene	980.	U
208-96-8	Acenaphthylene	980.	U	191-24-2	Benzo(g,h,i)Perylene	980.	U
99-09-2	3-Nitroaniline	4900.	U				

(1)-Cannot be separated from diphenylamine

TOTAL ION CHROMATOGRAM



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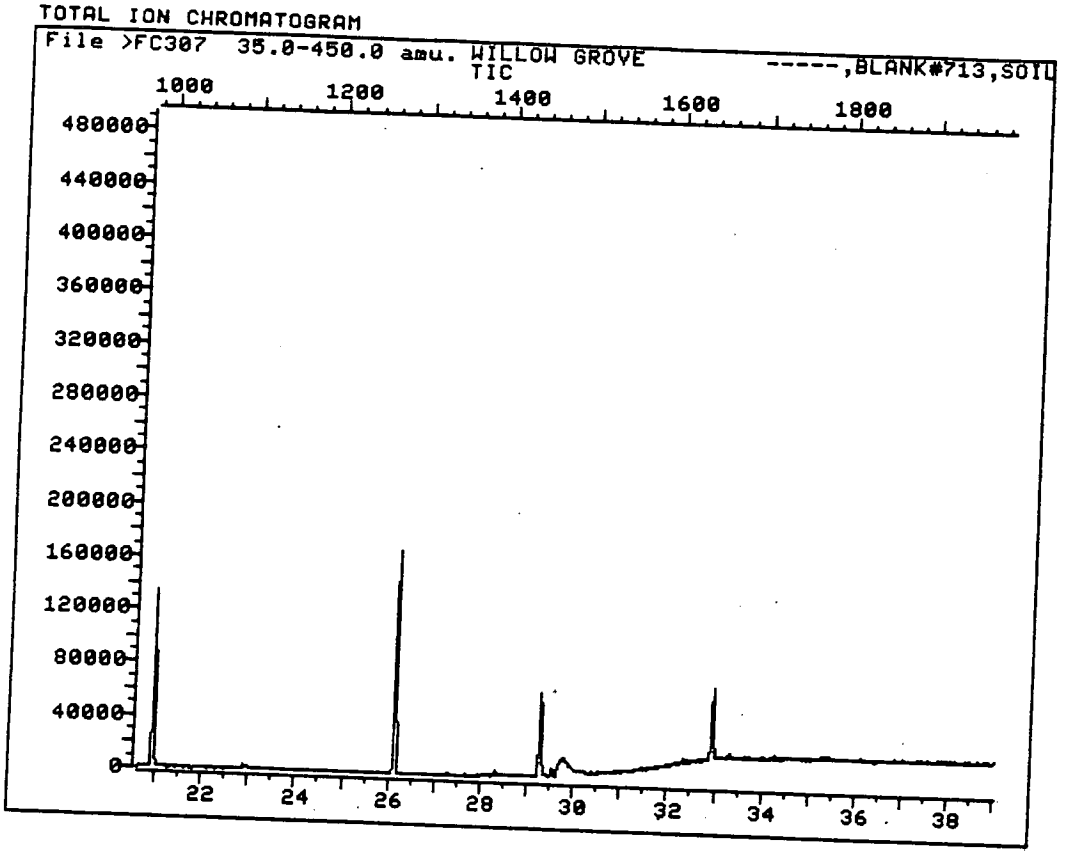
Misc: -----,BLANK#713,SOIL,10.18g,1mL, BL#713FOR2155,2157 BTL# 1

Id File: IDFCLP::8D
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 00:01
Injected at: 890530 23:03

TIC page 1 of 2

TOTAL ION CHROMATOGRAM



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Name: WILLOW GROVE
Misc: -----,BLANK#713,SOIL,10.18g,1mL, BL#713FOR2155,2157

Quant Output File: ^FC307::QT

BTL# 1

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890530 23:48

Operator ID: UNCLE
Quant Time: 890531 00:01
Injected at: 890530 23:03

TIC page 2 of 2

QUANT REPORT

erator ID: UNCLE
tput File: ^FC307::QT
ta File: >FC307::D4
me: WILLOW GROVE
sc: -----,BLANK#713,SOIL,10.18g,1mL, BL#713FOR2155,2157

Quant Rev: 6
Quant Time: 890531 00:01
Injected at: 890530 23:03
Dilution Factor: 1.00000

BTL# 1

File: IDFCLP::BD
tle: HSL BNA LIST---INSTRUMENT #6(F)
st Calibration: 890530 23:48

	Compound	R.T.	Q ion	Area	Conc	Units		q
1)	*d4-1,4-Dichlorobenzene	7.51	152.0	95256	40.00	NG		96
2)	2-Fluorophenol	4.98	112.0	333433	105.18	NG	53%	78
3)	Phenol-d5	6.87	99.0	455212	115.02	NG	58%	94
4)	Phenol	0.00	94.0	0	0.00	NG		
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG		
6)	2-Chlorophenol	7.11	128.0	537	~~16~~	NG		99
7)	1,3-Dichlorobenzene	0.00	146.0	0	0.00	NG		
8)	1,4-Dichlorobenzene	0.00	146.0	0	0.00	NG		
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG		
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG		
11)	2-Methylphenol	0.00	108.0	0	0.00	NG		
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG		
13)	4-Methylphenol	0.00	108.0	0	0.00	NG		
14)	N-Nitroso-Di-n-propylamine	0.00	70.0	0	0.00	NG		
15)	Hexachloroethane	0.00	117.0	0	0.00	NG		
16)	*d8-Naphthalene	10.92	136.0	367658	40.00	NG		87
17)	Nitrobenzene-d5	9.05	82.0	220768	71.15	NG	71%	89
18)	Nitrobenzene	0.00	77.0	0	0.00	NG		
19)	Isophorone	0.00	82.0	0	0.00	NG		
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG		
21)	2,4-Dim thylphenol	0.00	107.0	0	0.00	NG		
22)	Benzoic Acid	0.00	122.0	0	0.00	NG		
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG		
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG		
25)	1,2,4-Trichlorobenzene	0.00	180.0	0	0.00	NG		
26)	Naphthalene	0.00	128.0	0	0.00	NG		
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG		
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG		
29)	4-Chloro-3-methylphenol	0.00	107.0	0	0.00	NG		
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG		
31)	*d10-Acenaphthene	16.32	164.0	158250	40.00	NG		94
32)	H xachlorocyclopentadiene	0.00	237.0	0	0.00	NG		
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG		
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG		
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG		
36)	2-Fluorobiphenyl	14.29	172.0	426412	72.11	NG	72%	94
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG		
38)	Dimethylphthalate	16.32	163.0	54097	~~8.33~~	NG		53
39)	Acenaphthylene	0.00	152.0	0	0.00	NG		
40)	3-Nitroanilin	0.00	138.0	0	0.00	NG		
41)	Acenaphthene	0.00	153.0	0	0.00	NG		
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG		

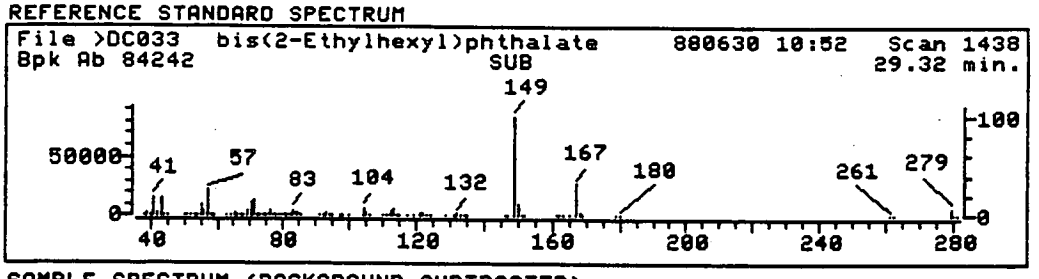
QUANT REPORT
page 2

Output File:^FC307:: Data File:>FC307::D4

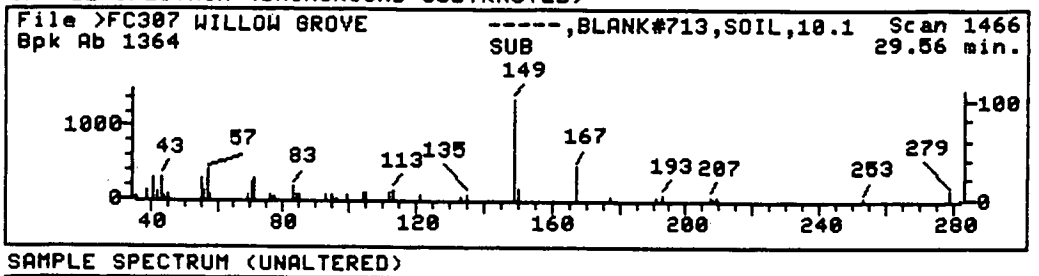
	Compound	R.T.	Q ion	Area	Conc	Units	q
43)	4-Nitrophenol	0.00	109.0	0	0.00	NG	
44)	Dibenzofuran	0.00	168.0	0	0.00	NG	
45)	2,4-Dinitrotoluene	0.00	165.0	0	0.00	NG	
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG	
47)	Diethylphthalate	0.00	149.0	0	0.00	NG	
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG	
49)	Fluorene	0.00	166.0	0	0.00	NG	
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG	
51)	*d10-Phenanthrene	20.95	188.0	154322	40.00	NG	98
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG	
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG	
54)	2,4,6-Tribromophenol	18.86	329.9	100658	130.96	NG 65%	95
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG	
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG	
57)	Pentachlorophenol	0.00	266.0	0	0.00	NG	
58)	Phenanthrene	0.00	178.0	0	0.00	NG	
59)	Anthracene	0.00	178.0	0	0.00	NG	
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG	
61)	Fluoranthene	0.00	202.0	0	0.00	NG	
62)	*d12-Chrysene	29.28	240.0	57994	40.00	NG	96
63)	Pyrene	0.00	202.0	0	0.00	NG	
64)	Terphenyl-d14	26.14	244.0	177078	80.58	NG 81%	88
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG	
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG	
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG	
68)	bis(2-Ethylhexyl)phthalate	29.56	149.0	3016	1.21	NG	96
69)	Chrysene	0.00	228.0	0	0.00	NG	
70)	*d12-Perylene	32.96	264.0	63040	40.00	NG	95
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG	
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG	
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG	
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG	
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG	
76)	Dib nzo(a,h)Anthracene	0.00	278.0	0	0.00	NG	
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG	

* Compound is ISTD

REFERENCE STANDARD SPECTRUM



SAMPLE SPECTRUM (BACKGROUND SUBTRACTED)



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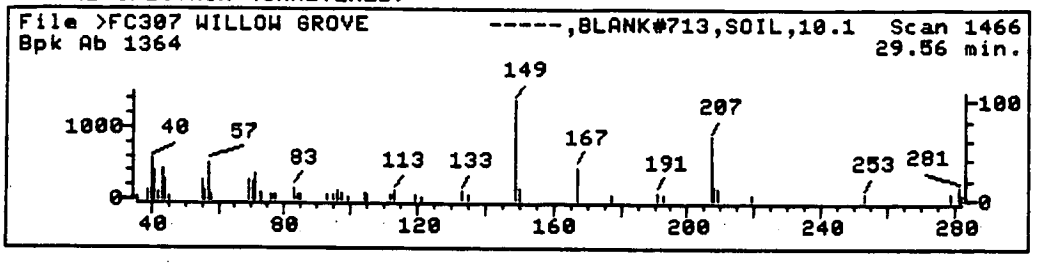

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Name: WILLOW GROVE
Mi c: -----,BLANK#713,SOIL,10.18g,1mL, BL#713FOR2155,2157 BTL# 1
Quant Time: 890531 00:01 Quant ID File: IDFCLP::BD
Injected at: 890530 23:03 Last Calibration: 890530 23:48

Compound No: 68
Compound Name: bis(2-Ethylhexyl)phthalate
Scan Number: 1466
Retention Time: 29.56 min.
Quant Ion: 149.0
Area: 3016
Concentration: 1.21 NG
q-value: 96

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
DUP MS(MS) EA#2107 ms

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: Low Medium (Circle One)
Date Extracted: 05/04/89
Date Analyzed: 6/14/89 1:36
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

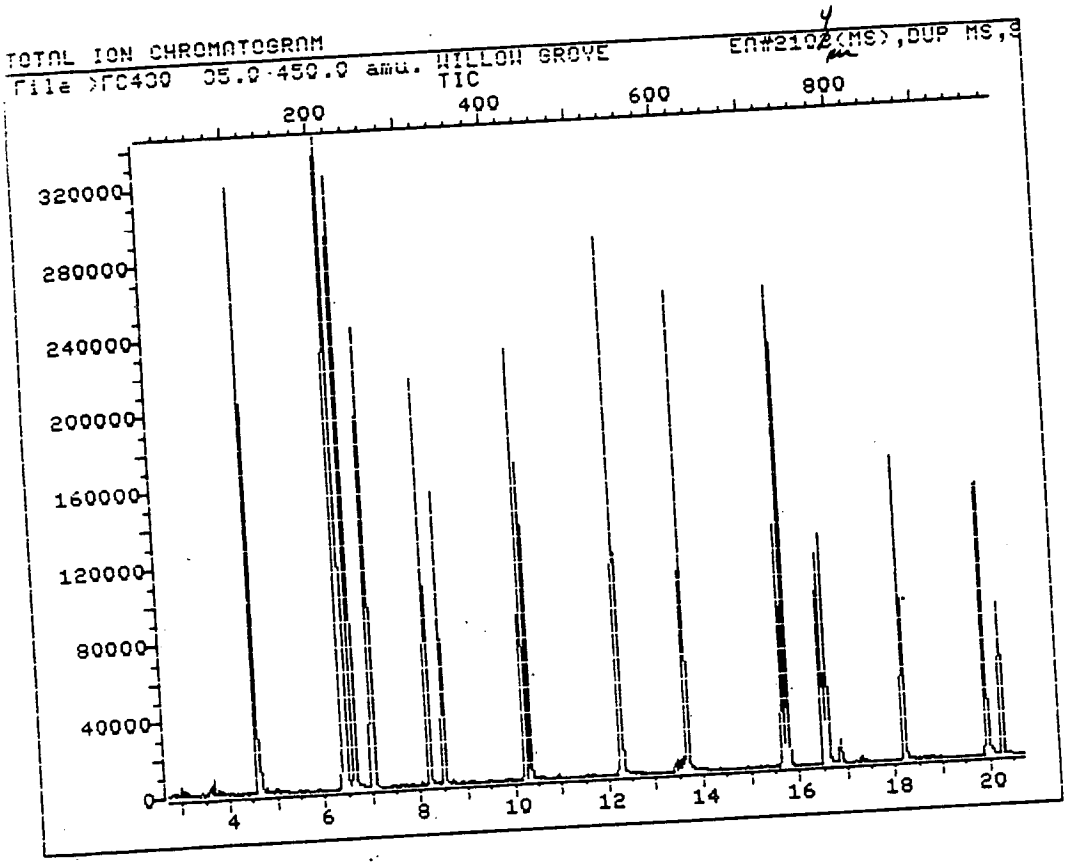
C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	14000.	
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	16000.	
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	8100.	
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	10000.	
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	190.	J
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	9200.	
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	17000.	
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	5800.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	5800.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	5800.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	10000.	
51-28-5	2,4-Dinitrophenol	5800.	U
100-02-7	4-Nitrophenol	26000.	
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	9400.	
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	5800.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	23000.	
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	13000.	
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2300.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	170.	J
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

Form 1

7/85



Quant Output File: ^FC430::QT

Data File: >FC430::D5

BTL# 3

Name: WILLOW GROVE

Misc: EA#2102(MS),DUP MS,SOIL,10.47g,1mL

Id File: IDFCLP::BD

Title: HSL BNA LIST---INSTRUMENT #6(F)

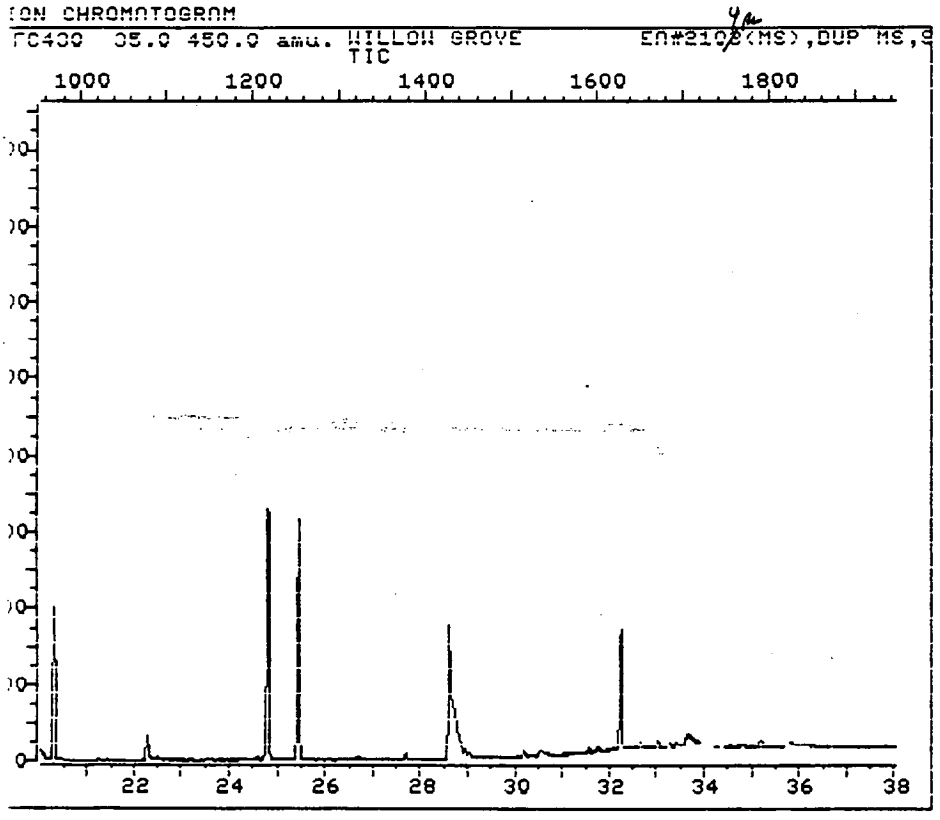
Last Calibration: 890613 23:59

Op rator ID: UNCLE

Quant Time: 890614 02:17

Injected at: 890614 01:36

TIC page 1 of 2



ta File: >FC430::D5 Quant Output File: ^FC430::QT
m : WILLOW GROVE
sc: EA#2107(MS),DUP MS,SOIL,10.47g,1mL BTL# 3

File: IDFCLP::BD
tle: HSL BNA LIST---INSTRUMENT #6(F)
st Calibration: 890613 23:59

erator ID: UNCLE
ant Time: 890614 02:17
jected at: 890614 01:36

C pag 2 of 2

QUANT REPORT

Operator ID: UNCLE
Output File: ^FC430::QT
Data File: >FC430::D5
Name: WILLOW GROVE
Misc: EA#210~~5~~4(MS),DUP MS,SOIL,10.47g,1mL

Quant Rev: 6
Quant Time: 890614 02:17
Injected at: 890614 01:36
Dilution Factor: 1.00000

BTL# 3

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 23:59

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.01	152.0	50718✓	40.00	NG	97
2)	2-Fluorophenol	4.59	112.0	175652	105.94	NG 53%	93
3)	Phenol-d5	6.43	99.0	205833	121.87	NG 61%	96
4)	Phenol	6.46	94.0	234860	120.81	NG	82
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	6.65	128.0	226225	133.28	NG	95
7)	1,3-Dichlorobenzene	7.05	146.0	131763	~~68.49 NG~~		95
8)	1,4-Dichlorobenzene	7.05	146.0	131763	69.65	NG	95
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-M thylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	8.21	70.0	120013	86.16	NG	95
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.35	136.0	181739✓	40.00	NG	87
17)	Nitrobenzene-d5	8.51	82.0	119576	76.06	NG 76%	92
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	9.86	122.0	755	1.65	NG✓	95
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	10.24	180.0	120198	78.39	NG	96
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	12.27	107.0	170554	148.89	NG	84
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	15.68	164.0	78370✓	40.00	NG	93
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	13.69	172.0	212261	77.46	NG 77%	96
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	0.00	163.0	0	0.00	NG	
39)	Acenaphthylene	15.21	152.0	546	~~.19 NG~~		93
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthen	15.79	153.0	188930	85.32	NG	97
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FC430:: Data File:>FC430::D5

	Compound	R.T.	Q ion	Area	Conc	Units		q
43)	4-Nitrophenol	16.52	109.0	30268M	220.29	NG		
44)	Dibenzofuran	0.00	168.0	0	0.00	NG		
45)	2,4-Dinitrotoluene	16.61	165.0	63800M	80.83	NG		
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG		
47)	Diethylphthalate	17.39	149.0	717	~~.23~~	~~NG~~		96
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG		
49)	Fluorene	0.00	166.0	0	0.00	NG		
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG		
51)	*d10-Phenanthrene	20.27	188.0	89604 ✓	40.00	NG		99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG		
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG		
54)	2,4,6-Tribromophenol	18.20	329.9	76489	168.98	NG	84%	95
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG		
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG		
57)	Pentachlorophenol	19.94	266.0	73551	197.14	NG		97
58)	Ph nanthrene	0.00	178.0	0	0.00	NG		
59)	Anthracene	0.00	178.0	0	0.00	NG		
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG		
61)	Fluoranthene	0.00	202.0	0	0.00	NG		
62)	*d12-Chrysene	28.60	240.0	56800 ✓	40.00	NG		95
63)	Pyrene	24.81	202.0	181278	110.00	NG		95
64)	Terphenyl-d14	25.44	244.0	141037	98.05	NG	98%	83
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG		
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG		
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG		
68)	bis(2-Ethylhexyl)phthalate	28.94	149.0	1967	1.44	NG	✓	98
69)	Chrysene	0.00	228.0	0	0.00	NG		
70)	*d12-Perylene	32.23	264.0	74671 ✓	40.00	NG		92
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG		
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG		
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG		
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG		
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG		
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG		
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG		

* Compound is ISTD

Lab Name : EA LABORATORIES
Case No : WILLOW GROVE

Sample Number
DUP MS(MSD) EA#2108 MSD 4

ORGANICS ANALYSIS DATA SHEET
(Page 2)

Semivolatile Compounds

Concentration: (Low) Medium (Circle One)
Date Extracted: 05/04/89
Date Analyzed: 6/14/89 2:27
Conc/Dil Factor: 1.00000
Percent Moisture (Decanted) N/A

GPC Cleanup __ Yes ✓ No
Separatory Funnel Extraction __ Yes
Continuous Liquid-Liquid Extraction ✓ Yes

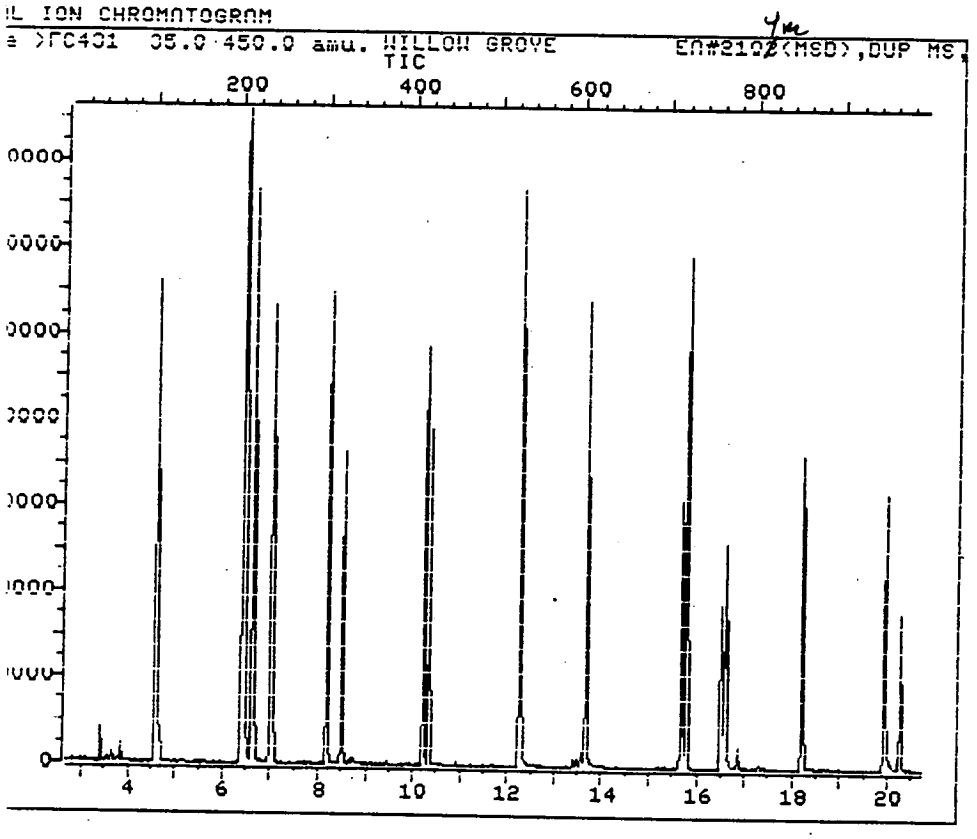
C.A.S. Number		ug/L or ug/Kg (Circle One)	
108-95-2	Phenol	14000.	
111-44-4	bis(2-Chloroethyl)ether	1200.	U
95-57-8	2-Chlorophenol	15000.	
541-73-1	1,3-Dichlorobenzene	1200.	U
106-46-7	1,4-Dichlorobenzene	7400.	
100-51-6	Benzyl Alcohol	1200.	U
95-50-1	1,2-Dichlorobenzene	1200.	U
95-48-7	2-Methylphenol	1200.	U
39638-32-9	bis(2-Chloroisopropyl)ether	1200.	U
106-44-5	4-Methylphenol	1200.	U
621-64-7	N-Nitroso-Di-n-propylamine	9200.	
67-72-1	Hexachloroethane	1200.	U
98-95-3	Nitrobenzene	1200.	U
78-59-1	Isophorone	1200.	U
88-75-5	2-Nitrophenol	1200.	U
105-67-9	2,4-Dimethylphenol	1200.	U
65-85-0	Benzoic Acid	180.	J
111-91-1	bis(2-Chloroethoxy)methane	1200.	U
120-83-2	2,4-Dichlorophenol	1200.	U
120-82-1	1,2,4-Trichlorobenzene	8400.	
91-20-3	Naphthalene	1200.	U
106-47-8	4-Chloroaniline	1200.	U
87-68-3	Hexachlorobutadiene	1200.	U
59-50-7	4-Chloro-3-methylphenol	18000.	
91-57-6	2-Methylnaphthalene	1200.	U
77-47-4	Hexachlorocyclopentadiene	1200.	U
88-06-2	2,4,6-Trichlorophenol	1200.	U
95-95-4	2,4,5-Trichlorophenol	5900.	U
91-58-7	2-Chloronaphthalene	1200.	U
88-74-4	2-Nitroaniline	5900.	U
131-11-3	Dimethylphthalate	1200.	U
208-96-8	Acenaphthylene	1200.	U
99-09-2	3-Nitroaniline	5900.	U

C.A.S. Number		ug/L or ug/Kg (Circle One)	
83-32-9	Acenaphthene	9200.	
51-28-5	2,4-Dinitrophenol	5900.	U
100-02-7	4-Nitrophenol	23000.	
132-64-9	Dibenzofuran	1200.	U
121-14-2	2,4-Dinitrotoluene	8500.	
606-20-2	2,6-Dinitrotoluene	1200.	U
84-66-2	Diethylphthalate	1200.	U
7005-72-3	4-Chlorophenyl-phenylether	1200.	U
86-73-7	Fluorene	1200.	U
100-01-6	4-Nitroaniline	1200.	U
534-52-1	4,6-Dinitro-2-methylphenol	5900.	U
86-30-6	N-Nitrososdiphenylamine (1)	1200.	U
101-55-3	4-Bromophenyl-phenylether	1200.	U
118-74-1	Hexachlorobenzene	1200.	U
87-86-5	Pentachlorophenol	22000.	
85-01-8	Phenanthrene	1200.	U
120-12-7	Anthracene	1200.	U
84-74-2	Di-n-Butyl phthalate	1200.	U
206-44-0	Fluoranthene	1200.	U
129-00-0	Pyrene	12000.	
85-68-7	Butylbenzylphthalate	1200.	U
91-94-1	3,3'-Dichlorobenzidine	2400.	U
56-55-3	Benzo(a)Anthracene	1200.	U
117-81-7	bis(2-Ethylhexyl)phthalate	150.	J
218-01-9	Chrysene	1200.	U
117-84-0	Di-n-Octyl phthalate	1200.	U
205-99-2	Benzo(b)Fluoranthene	1200.	U
207-08-9	Benzo(k)Fluoranthene	1200.	U
50-32-8	Benzo(a)Pyrene	1200.	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1200.	U
53-70-3	Dibenzo(a,h)Anthracene	1200.	U
191-24-2	Benzo(g,h,i)Perylene	1200.	U

(1)-Cannot be separated from diphenylamine

7/85

Form 1



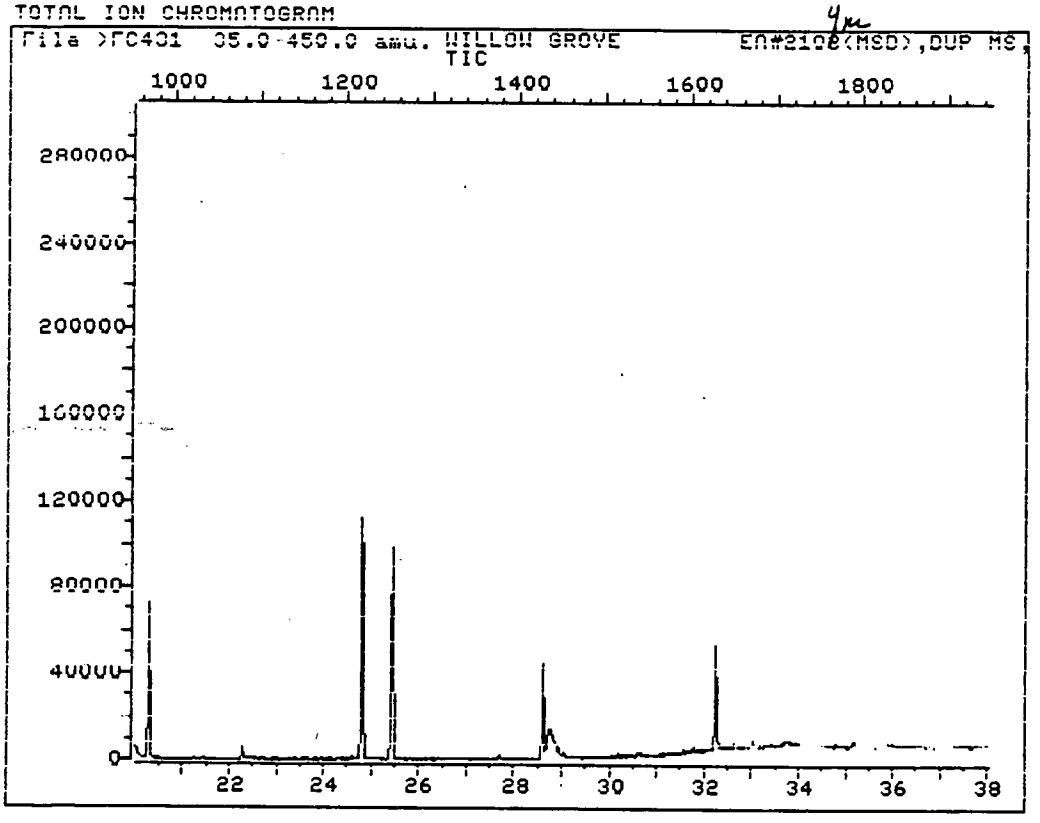
Data Fil : >FC431::D5 Quant Output File: ^FC431::QT
Name: WILLOW GROVE
Misc: EA#210%(MSD),DUP MS,SOIL,10.47g,1mL BTL# 4

d File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
ast Calibration: 890613 23:59

perator ID: UNCLE
uant Time: 890614 03:08
njected at: 890614 02:27

IC page 1 of 2

TOTAL ION CHROMATOGRAM



Data File: >FC431::D5 Quant Output File: ^FC431::QT
Name: WILLOW GROVE
Misc: EA#2108(MSD),DUP MS,SOIL,10.47g,1mL BTL# 4

Id File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 23:59

Operator ID: UNCLE
Quant Time: 890614 03:08
Injected at: 890614 02:27

TIC page 2 of 2

QUANT REPORT

Operator ID: UNCLE Quant Rev: 6 Quant Time: 890614 03:08
Output File: ^FC431::QT Injected at: 890614 02:27
Data File: >FC431::D5 Dilution Factor: 1.00000
Name: WILLOW GROVE
Misc: EA#210~~7~~ 8 (MSD),DUP MS,SOIL,10.47g,1mL BTL# 4

ID File: IDFCLP::BD
Title: HSL BNA LIST---INSTRUMENT #6(F)
Last Calibration: 890613 23:59

	Compound	R.T.	Q ion	Area	Conc	Units	q
1)	*d4-1,4-Dichlorobenzene	7.01	152.0	46676✓	40.00	NG	98
2)	2-Fluorophenol	4.58	112.0	149639	98.07	NG 49%	79
3)	Phenol-d5	6.43	99.0	172679	111.09	NG 56%	97
4)	Phenol	6.47	94.0	208891	116.75	NG	82
5)	bis(2-Chloroethyl)ether	0.00	93.0	0	0.00	NG	
6)	2-Chlorophenol	6.63	128.0	194012	124.20	NG	95
7)	1,3-Dichlorobenzene	7.05	146.0	108451	~~61.25~~ NG		96
8)	1,4-Dichlorobenzene	7.05	146.0	108451	62.29	NG	95
9)	Benzyl Alcohol	0.00	108.0	0	0.00	NG	
10)	1,2-Dichlorobenzene	0.00	146.0	0	0.00	NG	
11)	2-Methylphenol	0.00	108.0	0	0.00	NG	
12)	bis(2-Chloroisopropyl)ether	0.00	45.0	0	0.00	NG	
13)	4-Methylphenol	0.00	108.0	0	0.00	NG	
14)	N-Nitroso-Di-n-propylamine	8.21	70.0	100212	78.18	NG	94
15)	Hexachloroethane	0.00	117.0	0	0.00	NG	
16)	*d8-Naphthalene	10.35	136.0	161992✓	40.00	NG	88
17)	Nitrobenzene-d5	8.52	82.0	95772	68.35	NG 68%	91
18)	Nitrobenzene	0.00	77.0	0	0.00	NG	
19)	Isophorone	0.00	82.0	0	0.00	NG	
20)	2-Nitrophenol	0.00	139.0	0	0.00	NG	
21)	2,4-Dimethylphenol	0.00	107.0	0	0.00	NG	
22)	Benzoic Acid	9.86	122.0	613	1.50	NG ✓	97
23)	bis(2-Chloroethoxy)methane	0.00	93.0	0	0.00	NG	
24)	2,4-Dichlorophenol	0.00	162.0	0	0.00	NG	
25)	1,2,4-Trichlorobenzene	10.24	180.0	97084	71.04	NG	96
26)	Naphthalene	0.00	128.0	0	0.00	NG	
27)	4-Chloroaniline	0.00	127.0	0	0.00	NG	
28)	Hexachlorobutadiene	0.00	224.7	0	0.00	NG	
29)	4-Chloro-3-methylphenol	12.27	107.0	153260	150.10	NG	85
30)	2-Methylnaphthalene	0.00	142.0	0	0.00	NG	
31)	*d10-Acenaphthene	15.68	164.0	70031✓	40.00	NG	96
32)	Hexachlorocyclopentadiene	0.00	237.0	0	0.00	NG	
33)	2,4,6-Trichlorophenol	0.00	196.0	0	0.00	NG	
34)	2,4,5-Trichlorophenol	0.00	196.0	0	0.00	NG	
35)	2-Chloronaphthalene	0.00	162.0	0	0.00	NG	
36)	2-Fluorobiphenyl	13.69	172.0	174952	71.45	NG 71%	97
37)	2-Nitroaniline	0.00	65.0	0	0.00	NG	
38)	Dimethylphthalate	0.00	163.0	0	0.00	NG	
39)	Acenaphthylene	15.79	152.0	74881	~~29.18~~ NG		67
40)	3-Nitroaniline	0.00	138.0	0	0.00	NG	
41)	Acenaphthene	15.79	153.0	154684	78.17	NG	94
42)	2,4-Dinitrophenol	0.00	184.0	0	0.00	NG	

QUANT REPORT
page 2

Output File:^FC431:: Data File:>FC431::D5

	Compound	R.T.	Q ion	Area	Conc	Units		q
43)	4-Nitrophenol	16.52	109.0	23804M	193.88	NG		
44)	Dibenzofuran	0.00	168.0	0	0.00	NG		
45)	2,4-Dinitrotoluene	16.61	165.0	50957	72.25	NG		72
46)	2,6-Dinitrotoluene	0.00	165.0	0	0.00	NG		
47)	Diethylphthalate	0.00	149.0	0	0.00	NG		
48)	4-Chlorophenyl-phenylether	0.00	204.0	0	0.00	NG		
49)	Fluorene	0.00	166.0	0	0.00	NG		
50)	4-Nitroaniline	0.00	138.0	0	0.00	NG		
51)	*d10-Phenanthrene	20.27	188.0	75518	40.00	NG		99
52)	4,6-Dinitro-2-methylphenol	0.00	198.0	0	0.00	NG		
53)	N-Nitrosodiphenylamine	0.00	169.0	0	0.00	NG		
54)	2,4,6-Tribromophenol	18.20	329.9	63949	167.63	NG	84%	97
55)	4-Bromophenyl-phenylether	0.00	248.0	0	0.00	NG		
56)	Hexachlorobenzene	0.00	283.6	0	0.00	NG		
57)	Pentachlorophenol	19.94	266.0	59149	188.11	NG		96
58)	Phenanthrene	0.00	178.0	0	0.00	NG		
59)	Anthracene	0.00	178.0	0	0.00	NG		
60)	Di-n-Butyl phthalate	0.00	149.0	0	0.00	NG		
61)	Fluoranthene	0.00	202.0	0	0.00	NG		
62)	*d12-Chrysene	28.60	240.0	45758	40.00	NG		94
63)	Pyrene	24.81	202.0	139356	104.97	NG		96
64)	Terphenyl-d14	25.44	244.0	107217	92.52	NG	93%	83
65)	Butylbenzylphthalate	0.00	149.0	0	0.00	NG		
66)	3,3'-Dichlorobenzidine	0.00	252.0	0	0.00	NG		
67)	Benzo(a)Anthracene	0.00	228.0	0	0.00	NG		
68)	bis(2-Ethylhexyl)phthalate	28.94	149.0	1401	1.28	NG	✓	92
69)	Chrysene	0.00	228.0	0	0.00	NG		
70)	*d12-Perylene	32.23	264.0	57657	40.00	NG		92
71)	Di-n-Octyl phthalate	0.00	149.0	0	0.00	NG		
72)	Benzo(b)Fluoranthene	0.00	252.0	0	0.00	NG		
73)	Benzo(k)Fluoranthene	0.00	252.0	0	0.00	NG		
74)	Benzo(a)Pyrene	0.00	252.0	0	0.00	NG		
75)	Indeno(1,2,3-cd)Pyrene	0.00	276.0	0	0.00	NG		
76)	Dibenzo(a,h)Anthracene	0.00	278.0	0	0.00	NG		
77)	Benzo(g,h,i)Perylene	0.00	276.0	0	0.00	NG		

* Compound is ISTD

E. Quality Assurance Summary

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove (EA# 2087, 2089, 2091, 2093, 2095, 2097-9, 2103, 2104, 2106, 2108, 2155, 2157, 2158) Analysis: TCL semivolatiles

EA Laboratories Report No. 890292 Method: U.S. EPA-CLP

Reviewed by: Wm. Adams Date: 7/5/89

1. Water samples were extracted within 5 days of sample receipt (soils samples within 10 days) and analyzed within 40 days of extraction.

   ✓ Yes ____ No

2. The 12-hour tuning period for ~~DPPP~~ DFTPP was met for all samples.

   ✓ Yes ____ N

3. Initial calibration criteria were met for all samples: a five-point calibration curve was run, the RSD is <30% for all CCC compounds, and the mean RRF for SPCC compounds is >0.050.

   ✓ Yes ____ No

4. Continuing calibration criteria were met for all samples: the response factor percent difference from the mean initial calibration response factor for all CCC compounds was ≤25%, and the RRF for SPCC compounds is >0.050.

   ✓ Yes ____ N

5. Surrogate recovery limits were met for all samples.

   ✓ Yes ____ N

6. MS and MSD criteria were met for all samples.

   ✓ Yes ____ No

7. Method blank criteria were met for all samples: phthalates are ≤5X CRQL, all other compounds are <CRQL.

   ✓ Yes ____ No

(Revised 2 June 1989)

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove (see pg. 1 for sample nos.) Analysis: TCL semivolatiles

EA Laboratories Report No. 890292 Method: U.S. EPA-CLP

Reviewed by: Wm. Adams Date: 7/5/89

8. Laboratory control sample criteria were met for all samples.

✓ Yes ____ No

9. Field and equipment blanks: no target compounds were detected in the samples at concentrations <5X the concentration found in the highest associated blank.

✓ Yes ____ No

Comments: The following samples have at least one internal standard area outside of QC limits (as determined from the I.S. areas in the 50 ppm standard of the day): EA # 2097, 2106, & 2108. In all cases, the areas were below the 50% limit; between 49.7% & 46.8%. In my opinion, these low areas have no significant impact on data quality.

(Revised 2 June 1989)

5. PESTICIDE DATA

A. QC Summary

2E
WATER PESTICIDE SURROGATE RECOVERY

Lab Name:EA LABORATORIES Contract:10388.03
Lab Code:EA LABS Case No.: WILLOW GROVE SAS No.: N/A SDG No.:

	EPA SAMPLE NO.	S1 (HBB)#	OTHER
01	METHOD BLK RE	128.8%	
2098 02	RINSATE #1 SSL RE	83.6%	
2099 03	RINSATE #2 SSL RE	79.3%	
04			
05			
06			
07			
08			
09			
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27			
28			
29			
30			

ADVISORY QC LIMITS (24-154)

S1 (HBB) = Hexabromobenzene

Column used to flag recovery values

* Values outside of QC limits

D Surrogate diluted out

C Coelution

2E
SOIL PESTICIDE SURROGATE RECOVERY

Lab Name: EA LABORATORIES Contract:10388.03
Lab Code: EALABS Case No.: WILLOW GROVE SAS No.: N/A SDG No.: N/

	EPA SAMPLE NO.	S1 (HBB)#	OTHER
01	METHOD BLK	31.4%	
2087 02	NSLB-1 COMPOSITE	34.6%	
2089 03	NSLB-2 COMPOSITE	32.2%	
2093 04	NSLB-4 COMPOSITE	101.1%	
2095 05	NSLB-5 COMPOSITE	28.6%	
2097 06	NSLB-6 COMPOSITE	20.3%	
2104 07	DUPLICATE 9SL #1	25.3%	
08	DUPLICATE 9SL#1 MS	27.2%	
09	DUPLICATE 9SL#1 MSD	31.0%	
10	LAB QC	26.3%	
11	METHOD BLK	85.3%	**
12	METHOD BLK	27.5%	
~~2153 13~~	~~FTAB-4 COMPOSITE~~	~~21.6%~~	Rec
~~2151 14~~	~~FTAB-3 COMPOSITE~~	~~74.5%~~	
~~2106 15~~	~~FTAB-1 COMPOSITE~~	~~49.1%~~	
2091 16	NSLB-3 COMPOSITE	88.9%	
~~2108 17~~	~~FTAB-2 COMPOSITE~~	~~56.9%~~	Rec
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

ADVISORY QC LIMITS (20-150)

S1 (HBB) = Hexabromobenzene

Column used to flag recovery values

* Values outside of QC limits

D Surrogate diluted out

C Coelution

** SAMPLES WERE RE-EXTRACTED DUE TO LOW SURROGATE RECOVERY.

5 003

3E

SOIL PESTICIDE MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: EA LABORATORIES Contract: 10388.03 SDG No.: N/A
Lab Code: EALABS Case No.:WILLOW SAS No.: N/A
Matrix Spike-EPA Sample No.:DUPLICATE 9SL #1
2104ms/msD

COMPOUND	SPIKE ADDED (ug/kg)	SAMPLE CONCENTRATION (ug/kg)	MS CONCENTRATION (ug/kg)	MS % REC #	QC LIMITS REC.
Lindane	24.024	0	37.100	154.4%*	46-127
Heptachlor	24.024	0	15.000	62.4%	35-130
Aldrin	24.024	0	29.100	121.1%	34-132
Dieldrin	60.059	3.43	28.100	44.9%	31-134
Endrin	60.059	0	25.800	43.0%	42-139
4,4'-DDT	60.059	0	87.000	144.9%*	23-134

COMPOUND	SPIKE ADDED (ug/kg)	MSD CONCENTRATION (ug/kg)	MSD % REC #	% RPD #	QC LIMIT RPD	QC LIMIT REC
Lindane	23.603	38.200	161.8%*	-4.8%	50	46-127
Heptachlor	23.603	15.400	65.2%	-4.5%	31	35-130
Aldrin	23.603	28.800	122.0%	-0.7%	43	34-132
Dieldrin	59.007	27.400	40.6%	9.4%	38	31-134
Endrin	59.007	24.400	41.4%*	3.7%	45	42-139
4,4'-DDT	59.007	74.600	126.4%	12.7%	50	23-134

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 6 outside limits
Spike Recovery: 4 out of 12 outside limits

Comments:

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Name: EA LABORATORIES Contract: 10388.03
Lab Code: EALABS Case No.: WILLOW SAS No.: N/A
Lab Sample ID: BLK 700 Lab File ID:WILLOW SDG No.: N/A
Matrix: SOIL Level: low
Date Extracted: 4 MAY 89 Extraction: SOXHLET
Date Analyzed (1): 14 JUNE 89 Date Analyzed (2): 26 JUN
Time Analyzed (1): 06:10 Time Analyzed (2): 17:22
Instrument ID (1): 3B Instrument ID (2): 5D
GC Column ID (1): 1.5%SP2250/1.95%SP2401 ON 100/120 SUPELCOPORT GC Column ID (2): RTX-35 30M X .25 MM ID

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS & MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	NSLB-1 COMPOSITE	2087	14 JUNE 89	27 JUNE 89
02	NSLB-2 COMPOSITE	2089	14 JUNE 89	26 JUNE 89
03	NSLB-4 COMPOSITE	2093	14 JUNE 89	26 JUNE 89
04	NSLB-5 COMPOSITE	2095	14 JUNE 89	26 JUNE 89
05	NSLB-6 COMPOSITE	2097	14 JUNE 89	26 JUNE 89
06	DUPLICATE SSL #1	2104	14 JUNE 89	26 JUNE 89
07	DUPLICATE SSL#1 MS	2104 MS	14 JUNE 89	26 JUNE 89
08	DUPLICATE SSL#1 MSD	2104 MSD	14 JUNE 89	26 JUNE 89
09	LAB QC	MSTD 373	14 JUNE 89	27 JUNE 89
~~10~~	~~FTAB-1 COMPOSITE~~	~~2106~~	~~14 JUNE 89~~	~~27 JUNE 89~~
11	NSLB-3 COMPOSITE	2091	14 JUNE 89	27 JUNE 89
~~12~~	~~FTAB-2 COMPOSITE~~	~~2108~~	~~14 JUNE 89~~	~~27 JUNE 89~~
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26				

COMMENTS:

4C

PESTICIDE METHOD BLANK SUMMARY

Lab Name:	EA LABORATORIES	Contract:	10388.03		
Lab Code:	EALABS	Case No.:	WILLOW	SAS No.:	N/A
Lab Sample ID:	METHOD BLK 812 RE	Lab File ID:	WILLOW	SDG No.:	N/A
Matrix:	WATER	Level:	low		
Date Extracted:	21 JUNE 89	Extraction:	CONT		
Date Analyzed (1):	28 JUNE 89	Date Analyzed (2):	N/A		
Time Analyzed (1):	17:11	Time Analyzed (2):	N/A		
Instrument ID (1):	3B	Instrument ID (2):	N/A		
GC Column ID (1):	1.5%SP2250/1.95%SP2401 ON 100/120 SUPELCOPORT	GC Column ID (2):	N/A		

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS & MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
01	RINSATE #1 9SL RE	2098	28 JUNE 89	
02	RINSATE #2 9SL RE	2099	28 JUNE 89	
03				
04				
05				
06				
07				
08				
09				
10				
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15				
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25				
26				

COMMENTS:

B. Sample Data

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB-1 COMPOSITE

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GRO SAS #: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: 2087

Sample wt/vol: 10.79 g Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. 14.4 not dec. Date Extracted: 4 MAY 89

Extraction: SOXHLET Date Analyzed: 14 JUNE 89

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

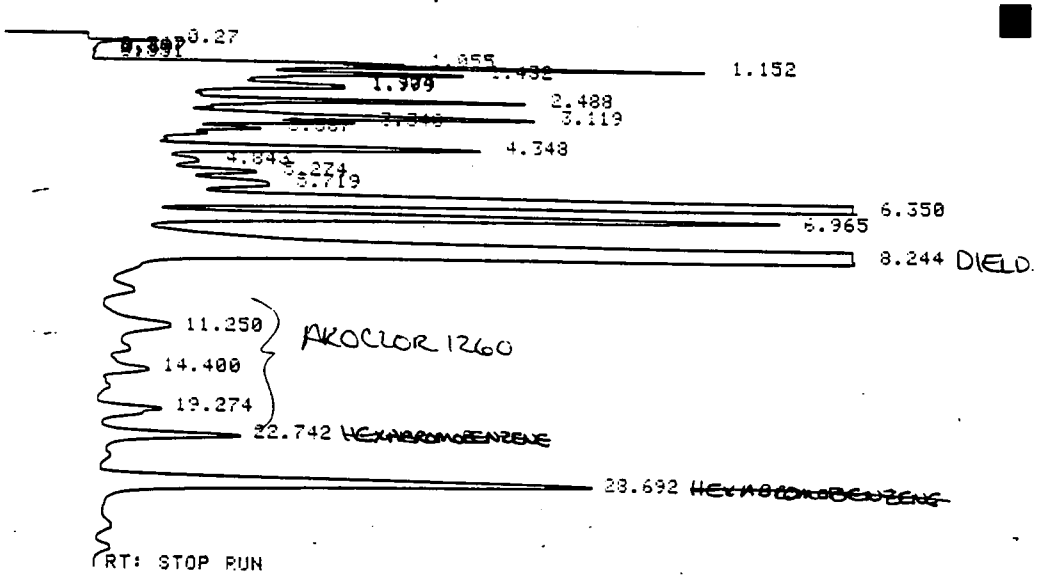
CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg	Q
319-84-6	alpha-BHC	2.8	U
319-85-7	beta-BHC	2.8	U
319-86-8	delta-BHC	2.8	U
58-89-9	gamma-BHC (Lindane)	2.8	U
76-44-8	Heptachlor	2.8	U
309-00-2	Aldrin	2.8	U
1024-57-3	Heptachlor epoxide	2.8	U
959-98-8	Endosulfan I	2.8	U
60-57-1	Dieldrin	2.8	U
72-55-9	4,4'-DDE	93.0	
72-20-8	Endrin	5.7	U
33213-65-9	Endosulfan II	5.7	U
72-54-8	4,4'-DDD	5.7	U
1031-07-8	Endosulfan sulfate	5.7	U
50-29-3	4,4'-DDT	5.7	U
72-43-5	Methoxychlor	5.7	U
53494-70-5	Endrin ketone	28.0	U
5103-71-9	alpha-Chlordane	5.7	U
5103-74-2	gamma-Chlordane	28.0	U
8001-35-2	Toxaphene	28.0	U
12674-11-2	Aroclor-1016	57.0	U
11104-28-2	Aroclor-1221	28.0	U
11141-16-5	Aroclor-1232	28.0	U
53469-21-9	Aroclor-1242	28.0	U
12672-29-6	Aroclor-1248	28.0	U
11097-69-1	Aroclor-1254	28.0	U
11096-82-5	Aroclor-1260	57.0	U
		24.0	J

FORM I PEST 1/87 Rev.

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 652

SAMPLE ID: NSLB-1 Composite



[hp] 5880A SAMPLER INJECTION @ 06:55 JUN 14, 1989
SAMPLE # : ID CODE :
12 WG2087
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 235.35			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.267	80960.10	BV	-----+	21868.20	222.95	17.446
0.50			RT: EXTEND RT → ON			
0.567	7506.13	VV	-----	1460.74	223.39	1.618
0.697	9616.42	VV	-----+	1776.60	223.58	2.072
0.851	7835.49	VV	-----	1237.00	223.81	1.688
1.055	1934.68	VV	-----	391.52	224.11	0.417
1.152	5020.29	VV	-----	761.02	224.25	1.082
1.432	6730.37	VV	-----	459.64	224.67	1.450
1.904	3011.69	VV	-----	314.37	225.36	0.649
1.979	3242.26	VV	-----	315.78	225.48	0.699
2.488	6499.91	VV	-----+	534.81	226.23	1.401
3.119	7641.02	VV	+-----	546.25	227.16	1.647
3.340	3271.17	VV	-----	325.74	227.49	0.705
3.587	2529.11	VV	-----	212.95	227.85	0.545
4.348	7416.31	VV	-----	477.88	228.98	1.598
4.843	3139.78	VV	-----	137.42	229.71	0.677
5.274	3627.66	VV	-----	206.47	230.35	0.782
5.719	6040.74	VV	-----	221.92	231.01	1.302
6.350	57930.10	VV	-----	4194.93	231.94	12.483
6.965	14329.60	VV	0.267	841.59	232.85	3.088
8.244	156393.00	VV	0.311	7865.11	234.74	33.701
11.250	4123.10	VV	-----	97.23	239.19	0.888
14.400	4777.29	VV	-----	66.91	243.85	1.029
19.274	3755.50	BV	-----	75.28	250.68	0.809
22.742	10605.10	BV	0.977	170.03	252.28	2.285
28.692	46120.00	PB	1.208	597.88	252.98	9.938

TOTAL AREA = 464057.00
MULTIPLIER = 1

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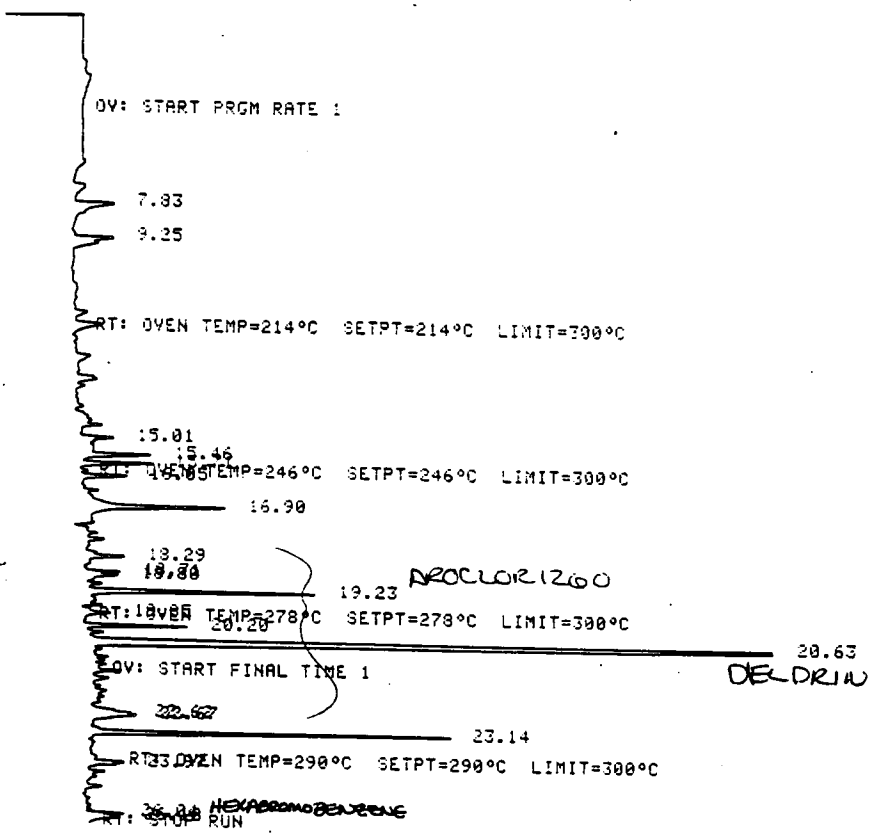
5 009

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 432

SAMPLE ID: NSUB-1 Composite

OVEN TEMP NOT READY



[hp] 5880A SAMPLER INJECTION @ 04:35 JUN 27, 1989
SAMPLE # : ID CODE :
27 WG 2087
AREA % COMPENSATED ANALYSIS

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 144.87			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			
0.00			RT: INTG → OFF			
0.01			RP: EXTEND RT → ON			
6.00			RT: THRESHOLD → 6			
6.00			RT: INTG → ON			
7.827	750.39	BB	0.23	50.71	136.11	2.648
9.251	457.81	BV	-----	50.91	135.46	1.616
15.007	224.75	VV	-----	43.63	144.43	0.793
15.463	526.47	VV	0.087	94.50	145.14	1.858
15.706	412.00	VP	0.067	95.71	145.52	1.454
16.051	299.48	VP	0.08	60.36	146.70	1.057
16.897	1201.94	VB	0.104	181.76	156.64	4.242
18.286	234.13	VV	-----	50.73	153.26	0.826
18.712	178.35	PV	-----	46.88	151.46	0.629
18.804	297.02	VV	-----	44.91	151.45	1.048
19.235	1295.11	VV	0.065	310.22	151.42	4.571
19.853	213.35	VP	0.10	34.73	151.38	0.753
20.204	509.85	PH	0.058	138.80	151.36	1.799
20.625	17540.80	HH	0.055	4975.80	151.36	61.904
22.617	474.59	HH	-----	61.77	151.36	1.675
22.674	507.88	HH	-----	69.50	151.36	1.792
23.136	2033.66	HH	0.065	488.81	151.36	7.177
23.975	307.22	HH	-----	54.18	151.36	1.084
26.040	241.14	HH	-----	45.48	151.36	0.851
26.181	629.60 A	HH	-----	49.82	151.36	2.222

TOTAL AREA = 28335.60
MULTIPLIER = 1

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5 010

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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB-2 COMPOSITE

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GRO SAS #: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: 2089

Sample wt/vol: 10.09 g Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. 16.1 not dec. Date Extracted: 4 MAY 89

Extraction: SOXHLET Date Analyzed: 14 JUNE 89

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

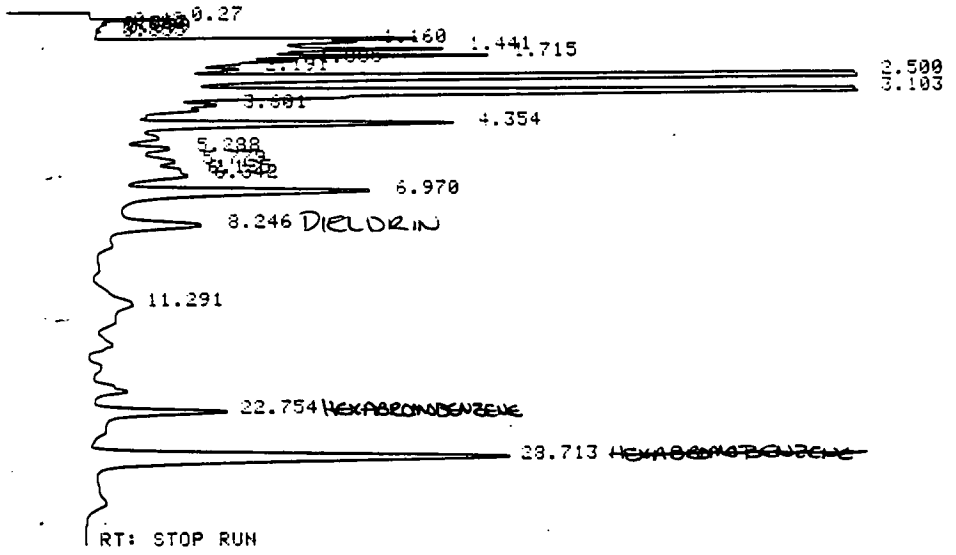
CONCENTRATION UNITS: ug/kg

CAS NO.	COMPOUND	(ug/L or ug/Kg)	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC (Lindane)	2.9	U
76-44-8	Heptachlor	2.9	U
309-00-2	Aldrin	2.9	U
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	1.4	J
72-55-9	4,4'-DDE	5.8	U
72-20-8	Endrin	5.8	U
33213-65-9	Endosulfan II	5.8	U
72-54-8	4,4'-DDD	5.8	U
1031-07-8	Endosulfan sulfate	5.8	U
50-29-3	4,4'-DDT	5.8	U
72-43-5	Methoxychlor	29.0	U
53494-70-5	Endrin ketone	5.8	U
5103-71-9	alpha-Chlordane	29.0	U
5103-74-2	gamma-Chlordane	29.0	U
8001-35-2	Toxaphene	58.0	U
12674-11-2	Aroclor-1016	29.0	U
11104-28-2	Aroclor-1221	29.0	U
11141-16-5	Aroclor-1232	29.0	U
53469-21-9	Aroclor-1242	29.0	U
12672-29-6	Aroclor-1248	29.0	U
11097-69-1	Aroclor-1254	58.0	U
11096-82-5	Aroclor-1260	58.0	U

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 738

SAMPLE ID: NSLB-2 Composite



[hp] 5880A SAMPLER INJECTION @ 07:41 JUN 14, 1989
SAMPLE # : ID CODE :
13 WG2089
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 267.90			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT + ON			
0.267	63279.90	BV	0.043	22939.40	248.65	18.986
0.417	31292.70	VV	-----*	4890.21	249.64	9.389
0.50			RT: EXTEND RT + ON			
0.567	7742.42	VV	-----	1597.09	250.64	2.323
0.699	13348.30	VV	-----	2720.29	251.51	4.005
0.855	9103.79	VV	-----	1419.12	252.54	2.731
1.160	2679.98	VV	-----	334.90	254.57	0.804
1.441	5008.57	VV	-----	437.56	256.44	1.503
1.715	3577.19	VV	-----	490.76	258.25	1.073
1.885	2052.27	VV	-----	249.58	259.38	0.616
2.191	2184.98	VV	-----	181.99	261.41	0.656
2.500	101896.00	VV	0.103	15491.60	263.46	30.571
3.103	19117.80	VV	-----	1527.22	267.45	5.736
3.601	1708.29	VV	-----	144.20	270.75	0.513
4.354	5880.61	VV	0.216	426.35	275.75	1.764
5.288	1272.25	VV	-----	76.20	281.93	0.382
5.779	1749.93	VV	-----	80.17	285.19	0.525
6.135	1219.96	VV	-----	84.38	287.55	0.366
6.342	1558.81	VV	-----	91.06	288.92	0.468
6.970	5252.11	VB	0.268	307.13	293.09	1.576
8.246	2240.69	BV	0.327	107.16	288.98	0.672
11.291	2239.42	PV	-----	49.68	262.54	0.672
22.754	9869.96	BV	0.953	162.22	263.74	2.961
28.713	39029.50	PH	1.196	511.09	259.48	11.710

TOTAL AREA = 333305.00
MULTIPLIER = 1

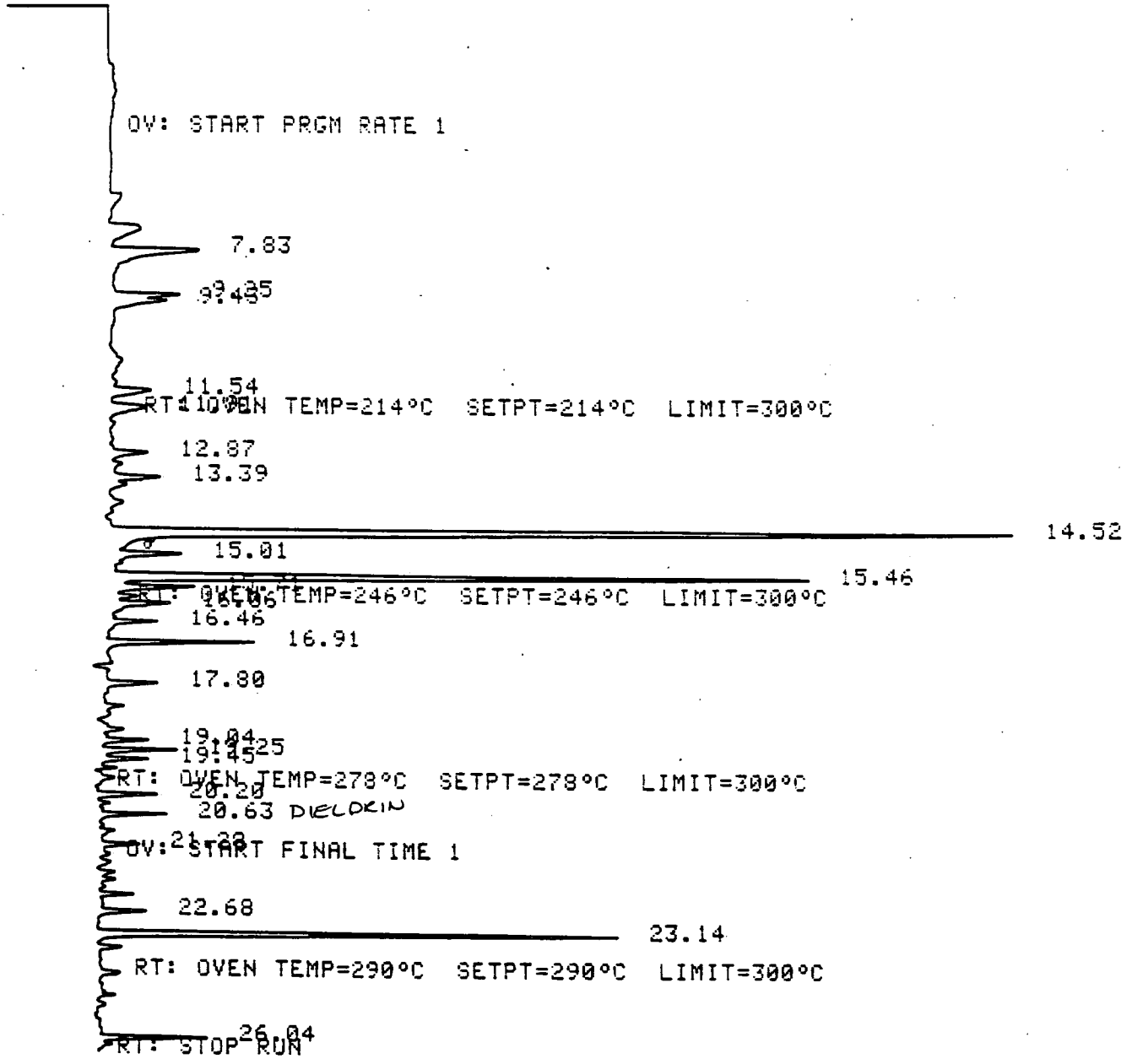
© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2-2888 (box of 10 pads)

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 1829

SAMPLE ID: NSLB-2 Composite

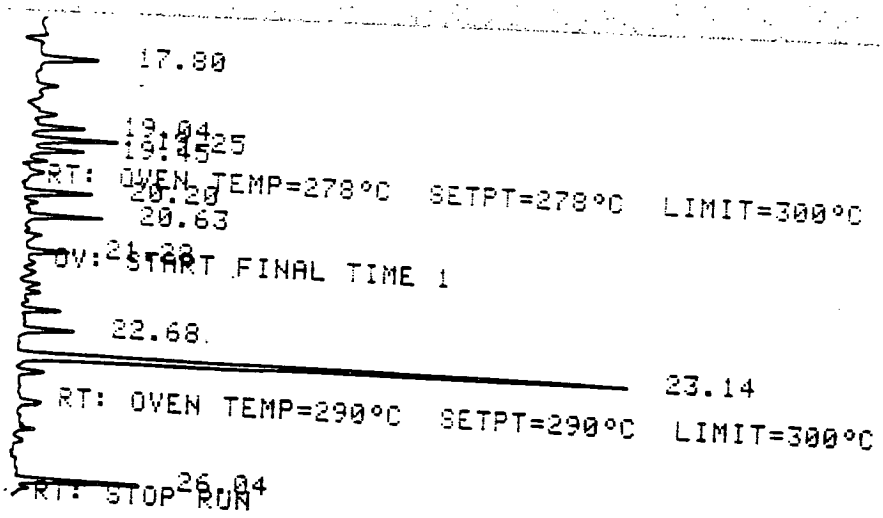
OVEN TEMP NOT READY
DET 2 TEMP NOT READY



[hp] 5880A SAMPLER INJECTION @ 18:33 JUN 26, 1989
SAMPLE # : ID CODE :
10 WG 2089
AREA % COMPENSATED ANALYSIS

© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2-2888 (box of 10 pads)

2888 (box of 10 pads)



[hp] 5880A SAMPLER INJECTION @ 18:33 JUN 26, 1989
SAMPLE # : ID CODE :
10 WG 2089
AREA % COMPENSATED ANALYSIS

BASELINE @ START RUN = 118.90
THRESHOLD @ START RUN = 4
PEAK WIDTH @ START RUN = 0.02
RT: INTG → OFF
RP: EXTEND RT → ON
RT: THRESHOLD → 6
RT: INTG → ON

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00						
0.00						
0.00						
0.00						
0.01						
6.00						
6.00						
7.827	1226.60	BB	0.22	87.05	122.64	5.887
9.245	559.33	BV	-----	65.56	124.11	2.685
9.430	594.42	VB	-----	52.46	123.84	2.853
11.542	314.92	VP	0.123	39.98	119.44	1.512
11.910	332.83	PP	0.146	35.76	118.68	1.598
12.870	248.21	VV	0.104	37.40	118.19	1.191
13.389	315.16	VV	0.098	50.34	118.17	1.513
14.520	7231.86	PV	0.080	1409.66	119.93	34.711
15.014	314.89	BV	0.079	62.29	124.00	1.511
15.461	3263.00	PV	0.071	718.03	119.03	15.662
15.710	479.55	VV	0.091	82.34	117.64	2.302
16.064	409.91	VV	0.11	58.97	115.68	1.967
16.462	250.38	VV	0.08	49.17	113.47	1.202
16.905	631.69	PB	0.066	150.06	111.56	3.032
17.798	242.49	BV	0.073	52.31	110.64	1.164
19.041	193.87	VV	0.065	46.92	105.44	0.931
19.246	360.05	VV	0.073	77.67	104.58	1.728
19.449	224.73	VV	0.073	48.50	103.73	1.079
20.204	258.75	PV	0.067	60.38	100.92	1.242
20.632	309.82	VV	0.069	69.93	101.03	1.487
21.278	204.30	VV	-----	41.45	101.18	0.981
22.685	222.66	VV	0.072	48.72	101.53	1.069
23.138	2063.57	VP	0.060	535.09	101.64	9.905
26.039	581.31	BH	0.084	108.24	104.85	2.790

TOTAL AREA = 20834.30
MULTIPLIER = 1

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB-3 COMPOSITE

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GRO SAS #: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: 2091

Sample wt/vol: 10.18 g Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. 20.2 not dec. Date Extracted: 4 MAY 89

Extraction: SOXHLET Date Analyzed: 14 JUNE 89

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

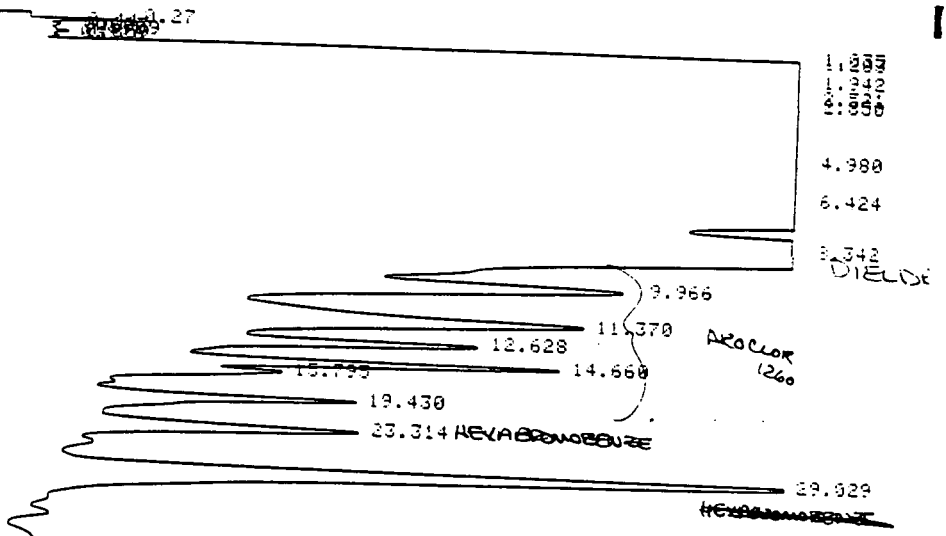
CAS NO.	COMPOUND	Q
319-84-6	alpha-BHC	3.0	U
319-85-7	beta-BHC	3.0	U
319-86-8	delta-BHC	3.0	U
58-89-9	gamma-BHC (Lindane)	3.0	U
76-44-8	Heptachlor	3.0	U
309-00-2	Aldrin	3.0	U
1024-57-3	Heptachlor epoxide	3.0	U
959-98-8	Endosulfan I	3.0	U
60-57-1	Dieldrin	3.0	U
72-55-9	4,4'-DDE	129.0	
72-20-8	Endrin	6.1	U
33213-65-9	Endosulfan II	6.1	U
72-54-8	4,4'-DDD	6.1	U
1031-07-8	Endosulfan sulfate	6.1	U
50-29-3	4,4'-DDT	6.1	U
72-43-5	Methoxychlor	6.1	U
53494-70-5	Endrin ketone	30.0	U
5103-71-9	alpha-Chlordane	6.1	U
5103-74-2	gamma-Chlordane	30.0	U
8001-35-2	Toxaphene	30.0	U
12674-11-2	Aroclor-1016	61.0	U
11104-28-2	Aroclor-1221	30.0	U
11141-16-5	Aroclor-1232	30.0	U
53469-21-9	Aroclor-1242	30.0	U
12672-29-6	Aroclor-1248	30.0	U
11097-69-1	Aroclor-1254	30.0	U
11096-82-5	Aroclor-1260	61.0	U
		49.0	J

FORM I PEST 1/87 Rev.

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401 ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 2058

SAMPLE ID: NSCB-3 Composite



[hp] 5880A SAMPLER INJECTION @ 21:01 JUN 14, 1989
SAMPLE # : 31 ID CODE : WG2091

AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00						
0.00			BASELINE @ START RUN = 464.02			
0.00			THRESHOLD @ START RUN = 6			
0.01			PEAK WIDTH @ START RUN = 0.04			
0.272	104534.00	BV	RP: EXTEND RT → ON ------*	26271.50	461.89	0.271
0.437	71615.30	VV	-----*	8890.91	479.87	0.185
0.50			RT: EXTEND RT → ON			
0.607	45032.00	VV	-----	7651.86	498.40	0.117
0.709	71420.80	VV	-----	11585.00	509.48	0.185
0.859	44836.50	VV	-----	8138.84	525.83	0.116
0.926	30828.40	VV	-----	6637.62	533.13	0.080
1.035	15778.80	VV	-----	4656.46	544.94	0.041
1.203	1231320.00	VV	-----	133946.00	563.29	3.187
1.942	1945300.00	VV	*-----	70085.30	643.84	5.035
2.521	3079160.00	VV	*-----	90696.50	706.92	7.970
2.850	3241760.00	VV	-----	135778.00	742.75	8.391
4.980	14019000.00	VV	*-----	126115.00	974.96	36.283
6.424	14330300.00	VV	*-----	367302.00	1132.25	37.094
8.342	190849.00	BP	*0.353	8455.96	1128.70	0.494
9.966	9244.78	PP	-----	358.12	830.81	0.024
11.370	14544.00	PV	0.527	431.71	709.62	0.038
12.628	16740.80	VV	-----	335.17	679.01	0.043
14.660	20832.60	VV	-----	484.10	629.57	0.054
15.795	10518.10	VP	-----	174.35	601.97	0.027
19.430	21696.40	PV	------*	321.64	547.96	0.056
23.314	27239.50	VV	1.239	344.33	530.30	0.071
29.029	90131.20	PP	1.512*	933.18	508.35	0.233

TOTAL AREA = 38632700.00
MULTIPLIER = 1

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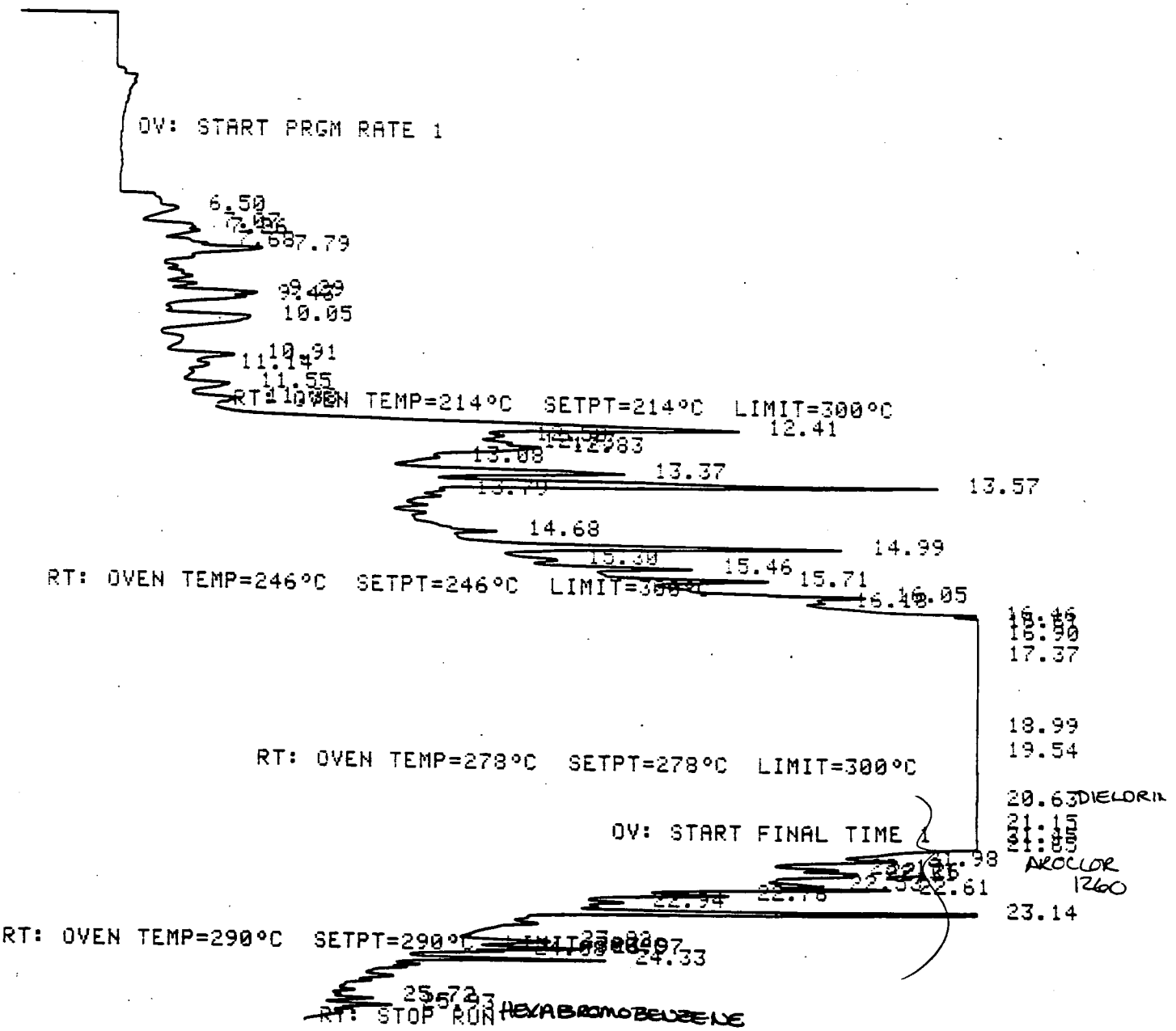
********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 246

SAMPLE ID: NSLB-3 Composite

OVEN TEMP NOT READY
DET 2 TEMP NOT READY



[hp] 5880A SAMPLER INJECTION @ 02:49 JUN 27, 1989
SAMPLE # : ID CODE :
24 WG 2091
AREA % COMPENSATED ANALYSIS

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50 24 WG 2091

AREA % COMPENSATED ANALYSIS

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 133.40			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			
0.00			RT: INTG → OFF			
0.01			RP: EXTEND RT → ON			
6.00			RT: THRESHOLD → 6			
6.00			RT: INTG → ON			
6.504	148.68	BB	0.142	16.40	182.69	0.020
7.075	366.73	BV	-----	52.92	161.83	0.049
7.256	714.87	VV	-----	59.50	162.89	0.095
7.677	680.52	VV	-----	65.46	165.36	0.090
7.786	1826.20	VV	-----*	125.34	166.00	0.243
9.290	1099.07	VV	*-----	110.03	174.81	0.146
9.426	1170.65	VV	-----	98.44	175.61	0.155
10.055	1465.03	VP	SYM	99.43	179.30	0.195
10.907	575.17	PV	-----	70.41	191.70	0.076
11.138	292.97	VV	-----	35.41	198.05	0.039
11.547	376.72	PP	0.128	46.05	209.51	0.050
11.877	262.22	PV	-----	35.30	227.12	0.035
12.406	6766.99	VV	*-----	531.94	274.54	0.899
12.579	2120.47	VV	-----*	262.75	290.05	0.282
12.735	1534.28	VV	-----	256.22	304.04	0.204
12.826	3477.04	VV	-----*	278.51	312.23	0.462
13.076	1441.02	VV	-----	149.16	334.66	0.191
13.370	3439.51	VV	*-----	320.24	361.06	0.457
13.573	4496.12	VV	-----	641.71	379.31	0.597
13.787	582.39	VV	-----	88.94	398.46	0.077
14.684	285.76	PV	-----	54.42	489.15	0.038
14.991	2322.25	VP	-----*	389.60	529.04	0.308
15.302	203.24	PP	-----	35.87	572.41	0.027
15.463	628.53	PV	-----	145.13	609.53	0.083
15.713	774.13	VP	-----	154.80	684.74	0.103
16.051	649.41	PV	-----	134.98	809.96	0.086
16.177	254.93	VP	-----	41.49	860.43	0.034
16.607	271.83	PV	-----	61.87	1105.54	0.036
16.897	3440.67	VV	*-----	728.18	1282.14	0.457
17.367	5564.18	VV	*-----	332.89	1567.98	0.739
18.990	253895.00	VV	*-----	7178.39	2555.00	33.719
19.539	420955.00	VV	*-----*	11713.80	2888.73	55.906
20.631	17479.60	BP	0.055	4983.54	3228.06	2.321
21.152	350.77	PP	-----	130.49	1726.08	0.047
21.449	637.95	PP	-----	210.30	1301.29	0.085
21.651	841.23	PP	-----	286.21	1108.66	0.112
21.982	304.51	PP	-----	83.25	895.82	0.040
22.171	336.25	PV	-----	89.74	828.51	0.045
22.257	495.29	VV	-----	130.98	806.03	0.066
22.313	964.81	VV	-----	142.34	791.41	0.128
22.530	947.59	VV	-----	161.12	734.67	0.126
22.608	1113.49	VV	-----	255.86	714.16	0.148
22.757	457.45	VP	-----	120.50	674.99	0.061
22.937	176.95	PV	-----	47.30	633.46	0.024
23.137	3352.07	VP	0.06	874.58	599.58	0.445
23.822	600.88	PV	-----	104.66	498.12	0.080
23.972	765.63	VV	-----	156.93	481.30	0.102
24.082	393.89	VP	-----	85.02	468.97	0.052
24.326	1034.49	PV	0.075	215.15	447.90	0.137
25.722	268.26	PP	0.090	46.46	368.80	0.035
25.931	362.51	PH	-----	71.68	363.73	0.048

5 118

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1

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB-4 COMPOSITE

ab Name: EA LABORATORIES Contract: 10388.03

ab Code: EALABS Case #: WILLOW GRO SAS #: N/A SDG No.: N/A

atrix: (soil/water) SOIL Lab Sample ID: 2093

ample wt/vol: 10.45 g Lab File ID: WILLOW

evel: (low/med) LOW Date Received: 3 MAY 89

Moisture: dec. 14.8 not dec. Date Extracted: 4 MAY 89

xtraction: ~~CONT~~ SOXHLET Date Analyzed: 14 JUNE 89

PC Cleanup: (Y/N) N pH: Dilution Factor: 1

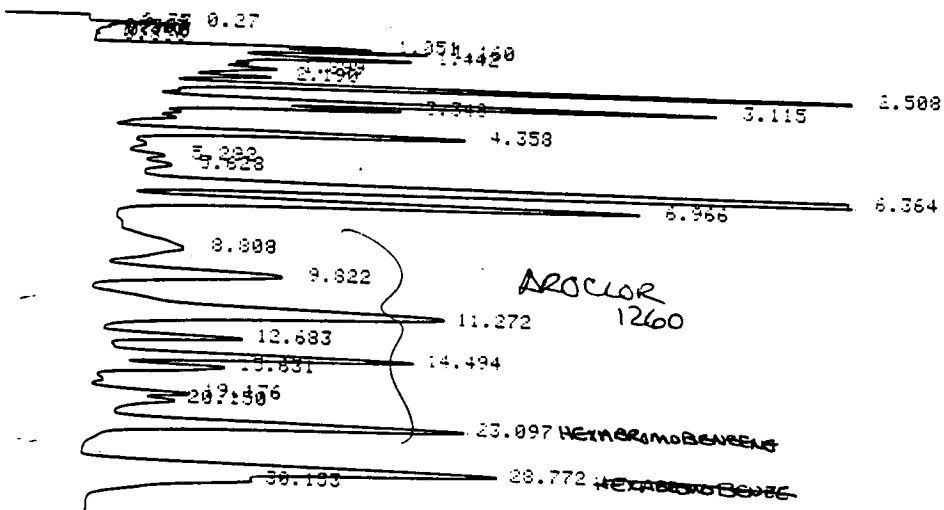
CONCENTRATION UNITS: ug/kg

CAS NO.	COMPOUND	(ug/L or ug/Kg)	Q
319-84-6	alpha-BHC	2.8	U
319-85-7	beta-BHC	2.8	U
319-86-8	delta-BHC	2.8	U
58-89-9	gamma-BHC (Lindane)	2.8	U
76-44-8	Heptachlor	2.8	U
309-00-2	Aldrin	2.8	U
1024-57-3	Heptachlor epoxide	2.8	U
959-98-8	Endosulfan I	2.8	U
60-57-1	Dieldrin	5.7	U
72-55-9	4,4'-DDE	5.7	U
72-20-8	Endrin	5.7	U
33213-65-9	Endosulfan II	5.7	U
72-54-8	4,4'-DDD	5.7	U
1031-07-8	Endosulfan sulfate	5.7	U
50-29-3	4,4'-DDT	5.7	U
72-43-5	Methoxychlor	28.0	U
53494-70-5	Endrin ketone	5.7	U
5103-71-9	alpha-Chlordane	28.0	U
5103-74-2	gamma-Chlordane	28.0	U
8001-35-2	Toxaphene	57.0	U
12674-11-2	Aroclor-1016	28.0	U
11104-28-2	Aroclor-1221	28.0	U
11141-16-5	Aroclor-1232	28.0	U
53469-21-9	Aroclor-1242	28.0	U
12672-29-6	Aroclor-1248	28.0	U
11097-69-1	Aroclor-1254	57.0	U
11096-82-5	Aroclor-1260	61.0	

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401 ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 823

SAMPLE ID: NSLB4 Composite



[hp] 5880A SAMPLER INJECTION @ 08:26 JUN 14, 1989
SAMPLE # : 14 ID CODE : WG2093 .

AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00						
0.00			BASELINE @ START RUN = 265.01			
0.00			THRESHOLD @ START RUN = 6			
0.01			PEAK WIDTH @ START RUN = 0.04			
0.266	66507.90	BV	RP: EXTEND RT + ON 0.038	27131.50	249.69	16.615
0.330	20392.50	VV	-----	6953.65	249.75	5.095
0.418	36553.50	VV	-----	6058.62	249.84	9.132
0.50			RT: EXTEND RT + ON			
0.567	8599.59	VV	-----	1676.88	250.00	2.148
0.700	12643.90	VV	-----	2576.46	250.13	3.159
0.856	8364.98	VV	-----	1401.02	250.29	2.090
1.051	1775.32	VV	-----	353.62	250.50	0.444
1.160	3070.30	VV	-----	422.94	250.61	0.767
1.442	4812.22	VV	-----	403.16	250.91	1.202
1.999	3610.37	VV	-----	235.04	251.38	0.902
2.190	2684.76	VV	-----	227.44	251.68	0.671
2.508	9279.43	VV	0.123	1184.36	252.01	2.318
3.115	9320.28	VV	-----	778.59	252.63	2.328
3.348	3770.80	VV	-----	385.73	252.88	0.942
4.358	6656.64	VV	0.223	467.62	253.92	1.663
5.292	1682.87	VV	-----	99.60	254.89	0.420
5.628	2440.49	VV	-----	108.54	255.24	0.610
6.364	21853.30	VV	0.232	1473.64	256.00	5.459
6.966	11419.70	VV	0.262	682.68	256.62	2.853
8.808	6798.55	VV	*-----	123.75	258.53	1.698
9.822	6395.30	VV	0.415	241.13	259.58	1.598
11.272	15110.60	VV	*-----	441.58	261.08	3.775
12.683	7456.33	VV	-----	192.20	262.54	1.863
14.494	16801.80	VV	0.653	402.91	264.41	4.197
15.631	10138.20	VV	-----+	170.36	265.59	2.533
19.176	6266.28	VV	-----	125.09	269.27	1.565
20.150	7359.37	VV	-----	106.58	270.27	1.839
23.097	30955.30	VB	1.053	460.27	273.32	7.733
28.772	40993.10	BH	-----	511.72	265.08	10.241
30.153	16569.10	HH	-----	207.00	265.08	4.139

TOTAL AREA = 400283.00
MULTIPLIER = 1

5. 020

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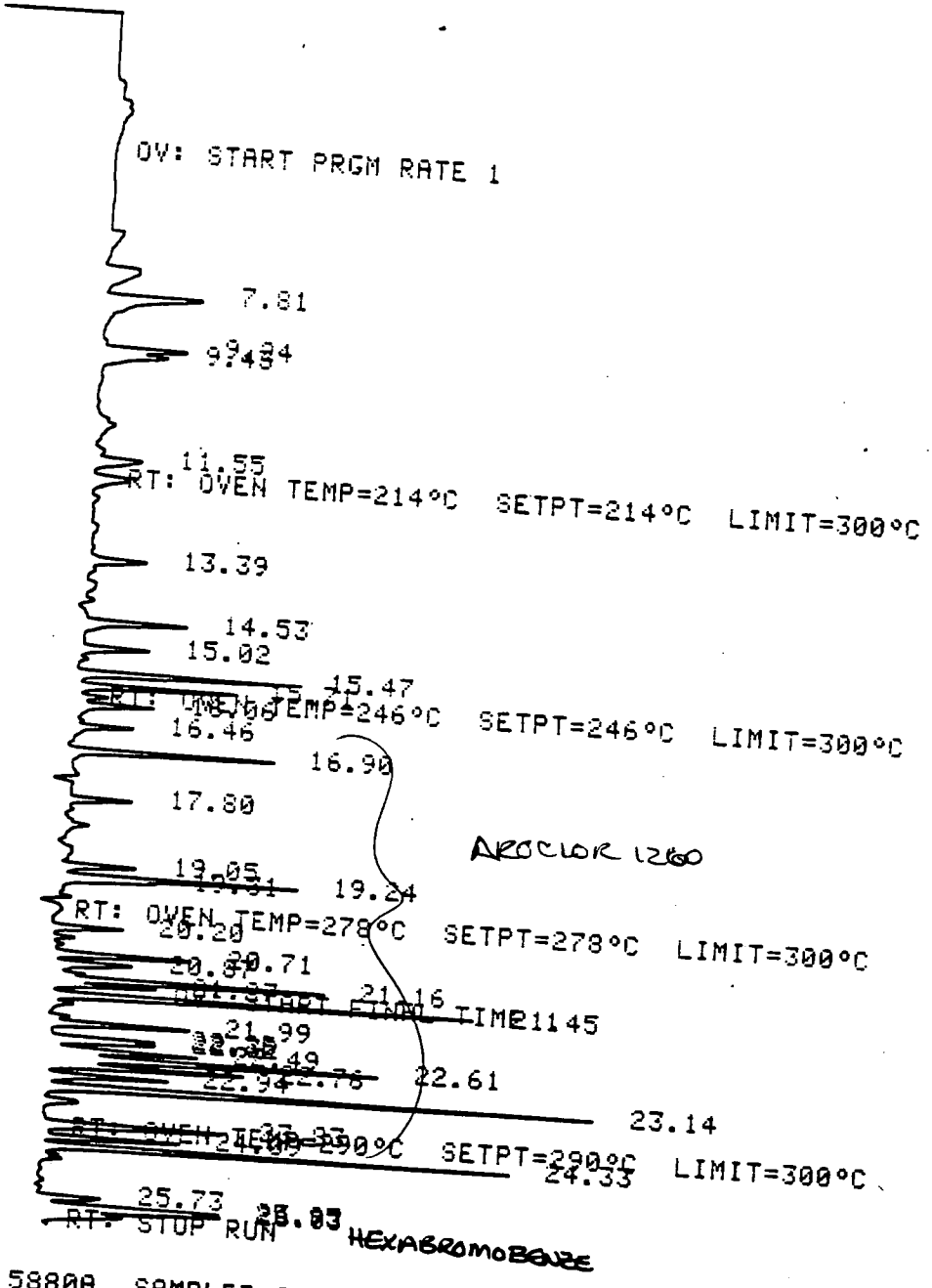
********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 1904

SAMPLE ID: NGLB-4 Composite

OVEN TEMP NOT READY
DET 2 TEMP NOT READY



5880A SAMPLER INJECTION @ 19:08 JUN 26, 1989
MPLE # : ID CODE :
11 WG 2093
% COMPENSATED ANALYSIS

5 021

	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %

23.14

24.33 SETPT=290°C LIMIT=300°C

25.73 25.03 HEXABROMOBENZE

STOP RUN

[hp] 5880A SAMPLER INJECTION @ 19:08 JUN 26, 1989

SAMPLE # : ID CODE :

11 WG 2093

AREA % COMPENSATED ANALYSIS

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 122.01			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			
0.00			RT: INTG → OFF			
0.01			RP: EXTEND RT → ON			
6.00			RT: THRESHOLD → 6			
6.00			RT: INTG → ON			
7.807	1148.38	BB	0.21	84.24	123.24	4.606
9.242	619.58	BV	-----	72.95	122.86	2.485
9.433	614.76	VB	-----	55.63	122.44	2.466
11.545	323.26	VP	0.124	40.78	119.32	1.297
13.392	321.15	VV	0.100	50.33	118.28	1.288
14.527	536.37	VV	0.093	90.57	117.75	2.152
15.017	289.23	BV	0.077	58.53	116.88	1.160
15.467	864.53	PV	0.070	192.40	113.95	3.468
15.708	628.84	VV	0.070	139.76	113.82	2.522
16.060	447.78	VV	0.10	69.41	113.66	1.796
16.462	259.14	VB	0.08	51.68	113.45	1.039
16.902	801.04	BV	0.069	182.66	109.44	3.213
17.799	232.99	BV	0.068	53.92	113.72	0.935
19.052	328.65	VV	0.078	66.38	108.96	1.318
19.240	793.43	VV	-----	212.48	108.24	3.183
19.313	336.99	VV	-----	86.46	107.97	1.352
20.201	255.20	PH	0.065	61.04	104.92	1.024
20.709	589.68	HH	0.074	124.16	104.92	2.365
20.866	459.63	HH	-----	72.42	104.92	1.844
21.159	945.40	HH	0.060	245.81	104.92	3.792
21.274	370.53	HH	-----	94.25	104.92	1.486
21.452	1426.77	HH	0.058	382.65	104.92	5.723
21.988	528.88	HH	0.066	125.90	104.92	2.121
22.260	368.07	HH	-----	95.61	104.92	1.476
22.317	372.32	HH	-----	97.23	104.92	1.493
22.491	669.02	HH	-----	135.00	104.92	2.684
22.611	1389.48	HH	-----	299.72	104.92	5.574
22.762	754.59	HH	-----	177.24	104.92	3.027
22.943	522.40	HH	0.075	109.17	104.92	2.095
23.138	1915.76	HH	0.061	492.88	104.92	7.685
23.825	850.07	HH	0.082	162.14	104.92	3.410
24.089	673.92	HH	0.085	123.50	104.92	2.703
24.330	2050.23	HH	0.076	420.38	104.92	8.224
25.729	435.90	HH	-----	56.37	104.92	1.749
25.952	842.98	HH	-----	163.62	104.92	3.381
26.030	962.62	HH	-----	164.06	104.92	3.861

TOTAL AREA = 24929.60

MULTIPLIER = 1

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© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2-2888 (box of 10 pads)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB-5 COMPOSITE

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GR SAS #: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: 2095

Sample wt/vol: 10.56 g Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. 19.3 not dec. Date Extracted: 4 MAY 89

Extraction: SOXHLET Date Analyzed: 14 JUNE 89

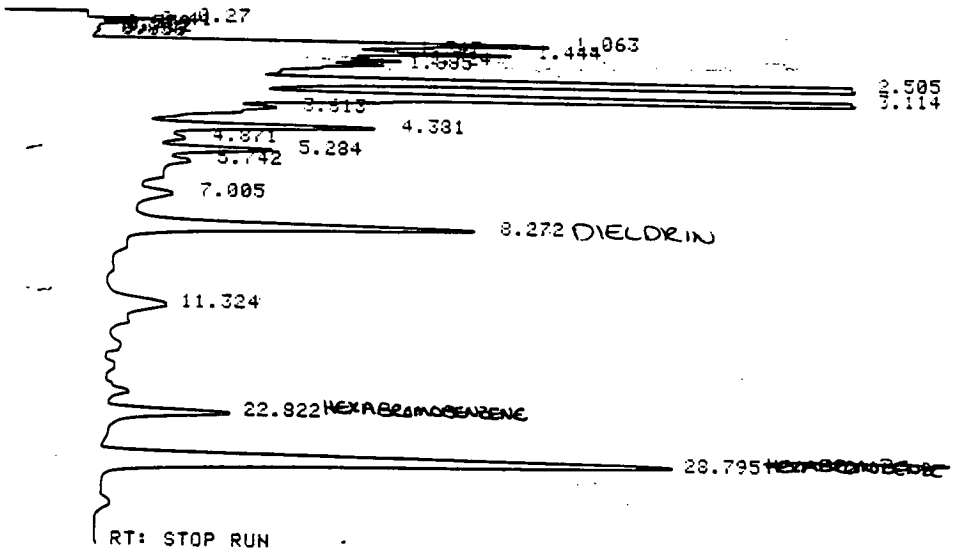
GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg	Q
319-84-6	alpha-BHC	3.0	U
319-85-7	beta-BHC	3.0	U
319-86-8	delta-BHC	3.0	U
58-89-9	gamma-BHC (Lindane)	3.0	U
76-44-8	Heptachlor	3.0	U
309-00-2	Aldrin	3.0	U
1024-57-3	Heptachlor epoxide	3.0	U
959-98-8	Endosulfan I	3.0	U
60-57-1	Dieldrin	5.4	J
72-55-9	4,4'-DDE	6.0	U
72-20-8	Endrin	6.0	U
33213-65-9	Endosulfan II	6.0	U
72-54-8	4,4'-DDD	6.0	U
1031-07-8	Endosulfan sulfate	6.0	U
50-29-3	4,4'-DDT	6.0	U
72-43-5	Methoxychlor	30.0	U
53494-70-5	Endrin ketone	6.0	U
5103-71-9	alpha-Chlordane	30.0	U
5103-74-2	gamma-Chlordane	30.0	U
8001-35-2	Toxaphene	60.0	U
12674-11-2	Aroclor-1016	30.0	U
11104-28-2	Aroclor-1221	30.0	U
11141-16-5	Aroclor-1232	30.0	U
53469-21-9	Aroclor-1242	30.0	U
12672-29-6	Aroclor-1248	30.0	U
11097-69-1	Aroclor-1254	60.0	U
11096-82-5	Aroclor-1260	60.0	U

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 909

SAMPLE ID: NSLB-5 Composite



[hp] 5880A SAMPLER INJECTION @ 09:11 JUN 14, 1989
SAMPLE # : ID CODE :
15 WG2095
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 255.70			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.267	71504.80	BV	-----*	25272.70	246.45	16.259
0.414	75517.50	VV	-----	13776.70	249.52	17.171
0.50			RT: EXTEND RT → ON			
0.579	16144.70	VV	-----	2993.46	252.99	3.671
0.702	13786.40	VV	-----	3305.34	255.58	3.135
0.769	8425.55	VV	-----	2238.37	256.98	1.916
0.856	8739.54	VV	-----	1617.66	258.82	1.987
1.063	3132.44	VV	-----	549.56	263.17	0.712
1.347	1666.75	VV	-----	351.20	269.13	0.379
1.444	4457.78	VV	-----	494.55	271.15	1.014
1.724	2977.92	VV	-----	354.48	277.04	0.677
1.885	2969.85	VV	-----	329.14	280.41	0.675
2.505	120072.00	VV	0.104	18085.40	293.45	27.302
3.114	24997.40	VV	-----*	1674.39	306.23	5.684
3.613	2126.40	VV	-----	161.62	316.71	0.483
4.381	3406.62	BV	0.196	272.36	327.41	0.775
4.871	882.44	VV	-----	46.58	325.08	0.201
5.284	2158.85	VV	-----	151.16	323.12	0.491
5.742	1409.69	VV	-----	56.49	320.94	0.321
7.005	860.53	VB	0.320	42.08	314.94	0.196
8.272	8435.42	BV	0.315	419.53	304.00	1.918
11.324	2592.72	PV	-----	74.68	278.35	0.590
22.822	8769.01	BB	0.929	147.81	282.65	1.994
28.795	54758.70	BB	1.231	696.27	274.94	12.451

TOTAL AREA = 439793.00
MULTIPLIER = 1

© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad): Cat. No. 2-2889 (box of 10 pads)

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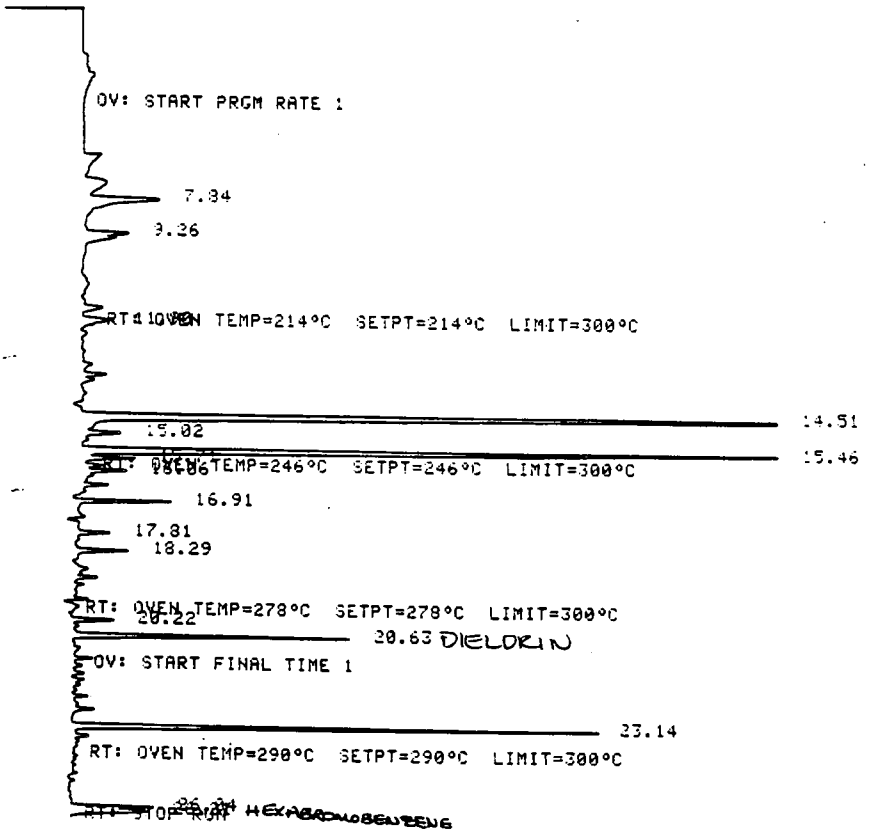
********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 1940

SAMPLE ID: USLB-5 Composite

OVEN TEMP NOT READY



[hp] 5880A SAMPLER INJECTION @ 19:44 JUN 26, 1989
SAMPLE # : ID CODE :
12 WG 2095
AREA % COMPENSATED ANALYSIS

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 124.48			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			
0.00			RT: INTG → OFF			
0.01			RP: EXTEND RT → ON			
6.00			RT: THRESHOLD → 6			
6.00			RT: INTG → ON			
7.842	1330.08	SB	0.23	91.02	134.90	5.360
9.260	484.37	BV	-----	55.27	130.49	1.952
11.898	339.70	SP	0.148	35.92	124.05	1.369
14.515	9423.48	PB	0.074	2003.35	128.88	37.977
15.017	209.89	BV	0.075	43.85	129.01	0.846
15.463	5116.14	PV	0.073	1090.76	121.39	20.618
15.711	389.13	VV	-----	72.08	119.43	1.568
16.060	373.67	VV	-----	63.84	116.65	1.506
16.906	567.40	PV	0.069	128.48	111.72	2.287
17.806	195.53	BV	0.073	41.88	116.93	0.788
18.295	311.23	BB	0.072	67.58	116.47	1.254
20.216	244.90	PV	0.069	55.18	109.89	0.987
20.632	1356.98	VV	-----	371.71	110.01	5.469
23.141	2742.73	VV	0.061	702.66	110.80	11.053
26.043	608.59	BV	-----	108.91	111.53	2.453
26.206	1119.98	A VP	-----	102.85	111.28	4.514

TOTAL AREA = 24813.80
MULTIPLIER = 1

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5 025

© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pod): Cat. No. 2-2888 (box of 10 pads)
© SUPELCO, INC., Bellefonte, PA

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

NSLB-6 COMPOSITE

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GR SAS #: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: 2097

Sample wt/vol: 10.17 g Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. 17.6 not dec. Date Extracted: 4 MAY 89

Extraction: SOXHLET Date Analyzed: 14 JUNE 89

GPC Cleanup:(Y/N) N pH: Dilution Factor: 1

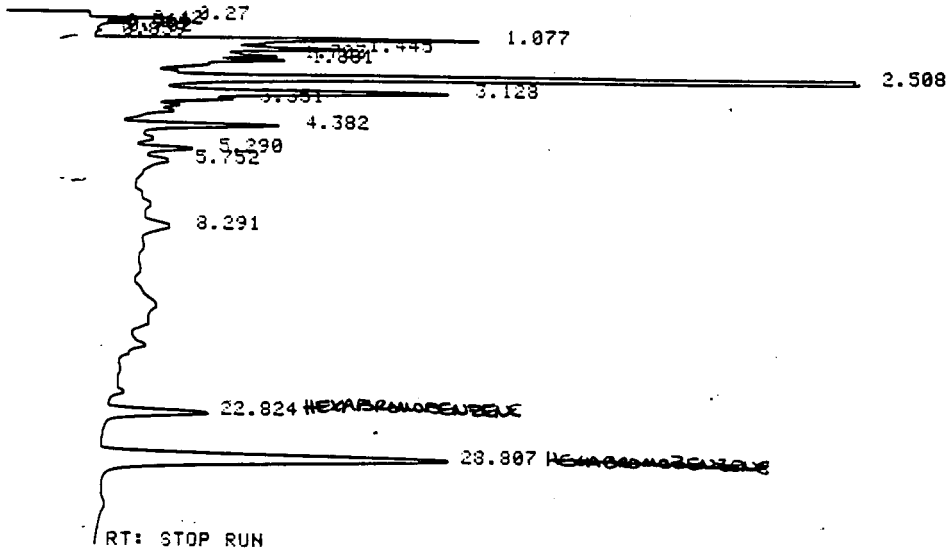
CONCENTRATION UNITS: ug/kg

CAS NO.	COMPOUND	(ug/L or ug/Kg)	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC (Lindane)	2.9	U
76-44-8	Heptachlor	2.9	U
309-00-2	Aldrin	2.9	U
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	5.9	U
72-55-9	4,4'-DDE	5.9	U
72-20-8	Endrin	5.9	U
33213-65-9	Endosulfan II	5.9	U
72-54-8	4,4'-DDD	5.9	U
1031-07-8	Endosulfan sulfate	5.9	U
50-29-3	4,4'-DDT	5.9	U
72-43-5	Methoxychlor	29.0	U
53494-70-5	Endrin ketone	5.9	U
5103-71-9	alpha-Chlordane	29.0	U
5103-74-2	gamma-Chlordane	29.0	U
8001-35-2	Toxaphene	59.0	U
12674-11-2	Aroclor-1016	29.0	U
11104-28-2	Aroclor-1221	29.0	U
11141-16-5	Aroclor-1232	29.0	U
53469-21-9	Aroclor-1242	29.0	U
12672-29-6	Aroclor-1248	29.0	U
11097-69-1	Aroclor-1254	59.0	U
11096-82-5	Aroclor-1260	59.0	U

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 1030

SAMPLE ID: DSLB-6 Composite



[hp] 5880A SAMPLER INJECTION @ 10:32 JUN 14, 1989
SAMPLE # : ID CODE :
17 WG2097
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 251.74			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.267	73846.00	BV	-----*	24701.70	240.95	26.241
0.416	58445.60	VV	-----	10496.00	241.18	20.769
0.50			RT: EXTEND RT → ON			
0.564	9239.16	VV	-----	2055.31	241.40	3.283
0.702	14657.80	VV	-----	2782.87	241.62	5.209
0.859	6200.32	VV	-----	1117.90	241.86	2.203
1.077	4635.18	VV	-----	478.38	242.19	1.647
1.445	3582.62	VV	-----	312.14	242.75	1.273
1.703	2068.92	VV	-----	232.10	243.15	0.735
1.881	2201.09	VV	-----	240.97	243.42	0.782
2.508	45783.60	VV	0.104	6889.81	244.38	16.269
3.128	6017.93	VV	-----	434.93	245.33	2.138
3.351	1727.68	VV	-----	174.20	245.67	0.614
4.382	3629.12	VV	-----	228.47	247.25	1.290
5.290	2281.80	VV	-----	122.55	248.64	0.811
5.752	4275.39	VV	-----	93.50	249.35	1.519
8.291	4249.70	VV	-----	92.15	253.24	1.510
22.824	6228.53	BB	0.807	120.82	272.07	2.213
28.807	32341.50	BB	1.202	421.24	264.46	11.493

TOTAL AREA = 281412.00
MULTIPLIER = 1

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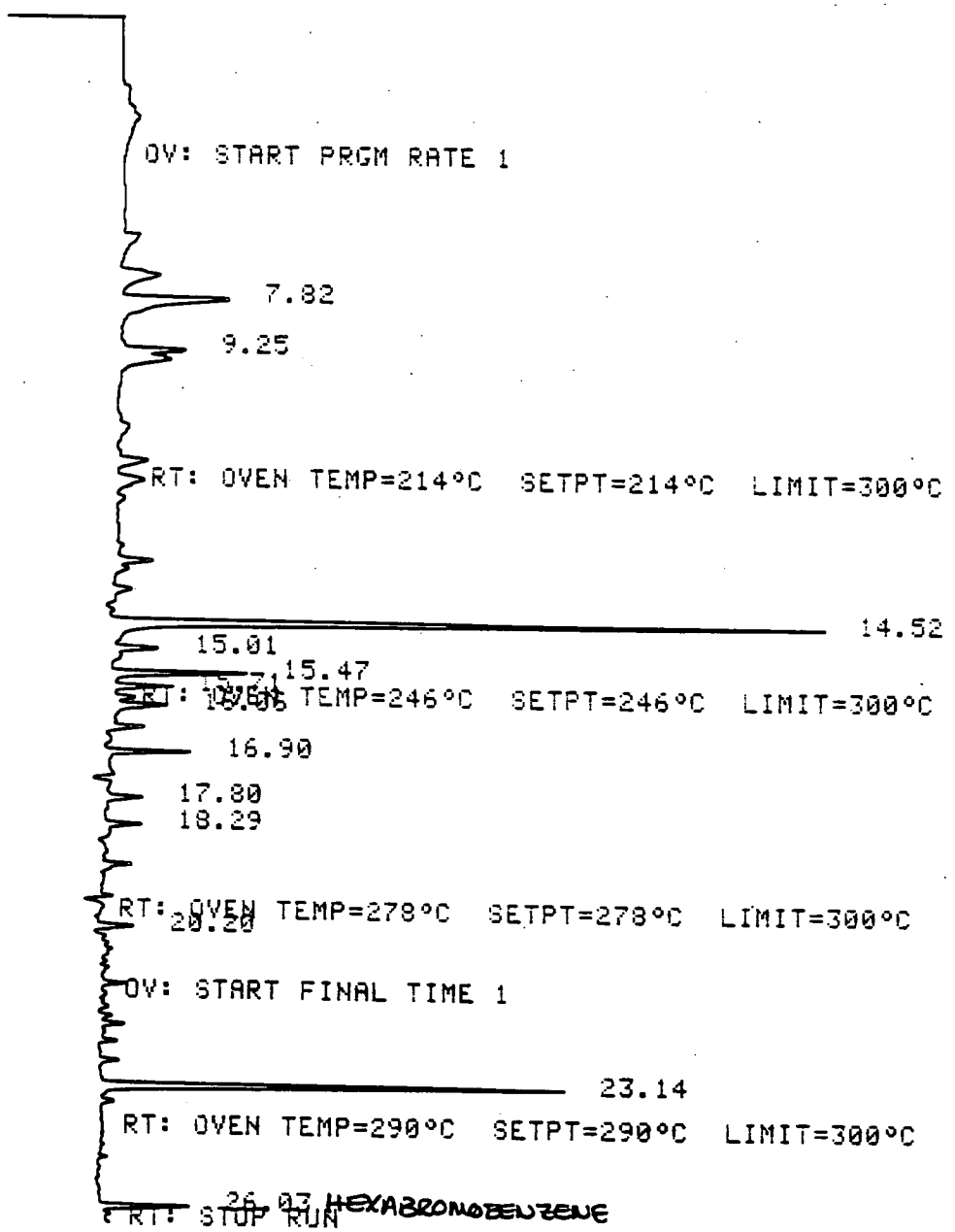
********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 2126

SAMPLE ID: N5LB-6 Composite

OVEN TEMP NOT READY
DET 2 TEMP NOT READY



[hp] 5880A SAMPLER INJECTION @ 21:30 JUN 26, 1989
SAMPLE # : ID CODE :
15 WG 2097
AREA % COMPENSATED ANALYSIS

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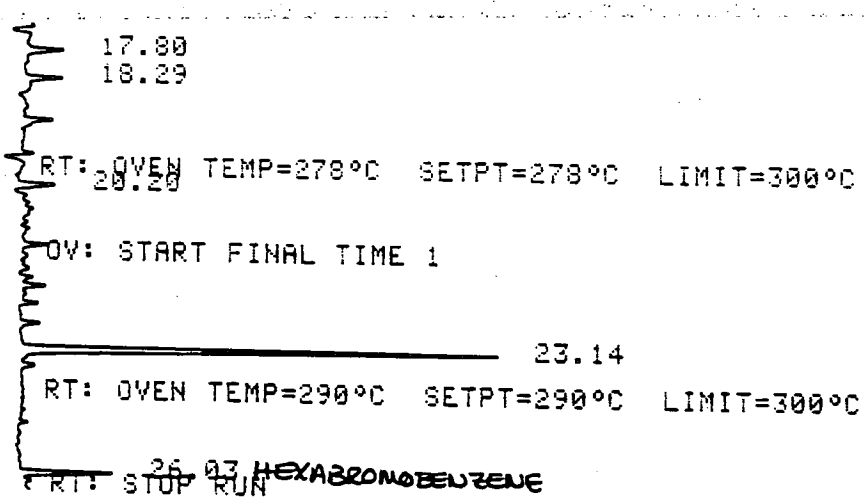


[hp] 5880A SAMPLER INJECTION @ 21:30 JUN 26, 1989
SAMPLE # : ID CODE :
15 WG 2097
AREA % COMPENSATED ANALYSIS

132

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 124.15			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			
0.00			RT: INTG → OFF			
0.01			RP: EXTEND RT → ON			
6.00			RT: THRESHOLD → 6			
6.00			RT: INTG → ON			
7.825	1331.92	BB	0.22	95.03	124.60	14.364
9.251	460.89	BV	-----	54.62	125.04	4.971
14.516	3293.74	PV	0.08	640.59	113.22	35.521
15.014	203.81	VV	-----	40.95	113.92	2.198
15.465	556.20	BV	0.072	121.73	114.08	5.998
15.707	227.02	VV	0.077	46.02	113.12	2.448
16.058	362.65	VV	-----	51.46	111.74	3.911
16.903	274.17	PB	0.059	73.20	111.31	2.957
17.797	138.39	PV	0.071	30.41	110.65	1.492
18.293	146.57	VV	0.073	31.53	108.70	1.581
20.202	154.23	VP	0.071	33.97	101.24	1.663
23.139	1694.72	VV	-----	419.48	104.03	18.277
26.035	428.25	BH	0.084	79.96	107.19	4.618

TOTAL AREA = 9272.58
MULTIPLIER = 1

88 (box of 10 pads)
© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUPLICATE 9SL #1

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GR SAS #: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: Z104

Sample wt/vol: 10.28 g Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. 17.5 not dec. Date Extracted: 4 MAY 89

Extraction: SOXHLET Date Analyzed: 14 JUNE 89

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

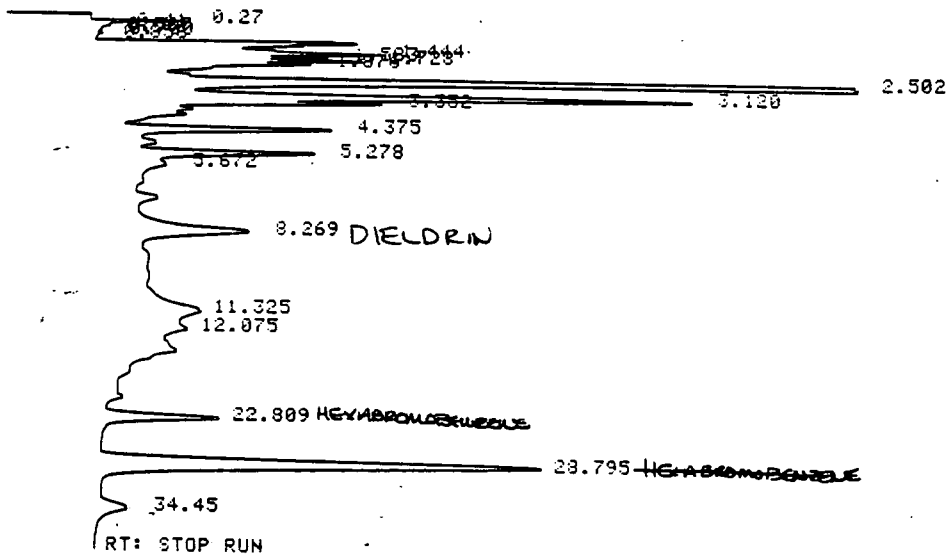
CONCENTRATION UNITS: ug/kg
(ug/L or ug/Kg)

CAS NO.	COMPOUND		Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC (Lindane)	2.9	U
76-44-8	Heptachlor	2.9	U
309-00-2	Aldrin	2.9	U
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	3.4	J
72-55-9	4,4'-DDE	5.9	U
72-20-8	Endrin	5.9	U
33213-65-9	Endosulfan II	5.9	U
72-54-8	4,4'-DDD	5.9	U
1031-07-8	Endosulfan sulfate	5.9	U
50-29-3	4,4'-DDT	5.9	U
72-43-5	Methoxychlor	29.0	U
53494-70-5	Endrin ketone	5.9	U
5103-71-9	alpha-Chlordane	29.0	U
5103-74-2	gamma-Chlordane	29.0	U
8001-35-2	Toxaphene	59.0	U
12674-11-2	Aroclor-1016	29.0	U
11104-28-2	Aroclor-1221	29.0	U
11141-16-5	Aroclor-1232	29.0	U
53469-21-9	Aroclor-1242	29.0	U
12672-29-6	Aroclor-1248	29.0	U
11097-69-1	Aroclor-1254	59.0	U
11096-82-5	Aroclor-1260	59.0	U

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL 8
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 1114

SAMPLE ID: DUPLICATE 9SL *1



[hp] 5830A SAMPLER INJECTION @ 11:17 JUN 14, 1989
SAMPLE # : ID CODE :
18 WG2104
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 253.72			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.267	91450.50	BV	-----*	28588.80	247.05	23.335
0.412	32466.70	VV	-----*	5244.90	259.37	8.284
0.50			RT: EXTEND RT → ON			
0.567	12348.90	VV	-----	2467.59	272.49	3.151
0.700	15441.90	VV	-----*	3095.75	283.75	3.940
0.856	6998.68	VV	-----	1204.00	296.99	1.786
1.444	2489.87	VV	-----	250.22	346.75	0.635
1.583	1094.09	VV	-----	181.02	358.53	0.279
1.728	1299.50	VV	-----	212.35	370.85	0.332
1.876	912.05	VB	-----	135.02	383.34	0.233
2.502	140891.00	PV	0.102	21676.50	359.71	35.950
3.120	7099.30	VV	-----	651.62	333.13	1.811
3.352	2469.21	VV	-----	279.21	323.15	0.630
4.375	3112.02	PV	0.192	253.81	288.15	0.794
5.278	3325.72	VV	-----	233.98	287.22	0.849
5.672	1444.17	VV	-----	55.06	286.81	0.368
8.269	5321.21	VV	-----	158.45	284.14	1.358
11.325	5964.41	VV	-----	104.05	280.99	1.522
12.075	5675.06	VV	-----	89.21	280.23	1.448
22.809	7747.31	BB	0.867	139.87	269.89	1.977
28.795	41406.70	BP	1.205	538.12	266.07	10.565
34.454	2949.00	BB	1.352	34.16	266.03	0.752

TOTAL AREA = 391907.00
MULTIPLIER = 1

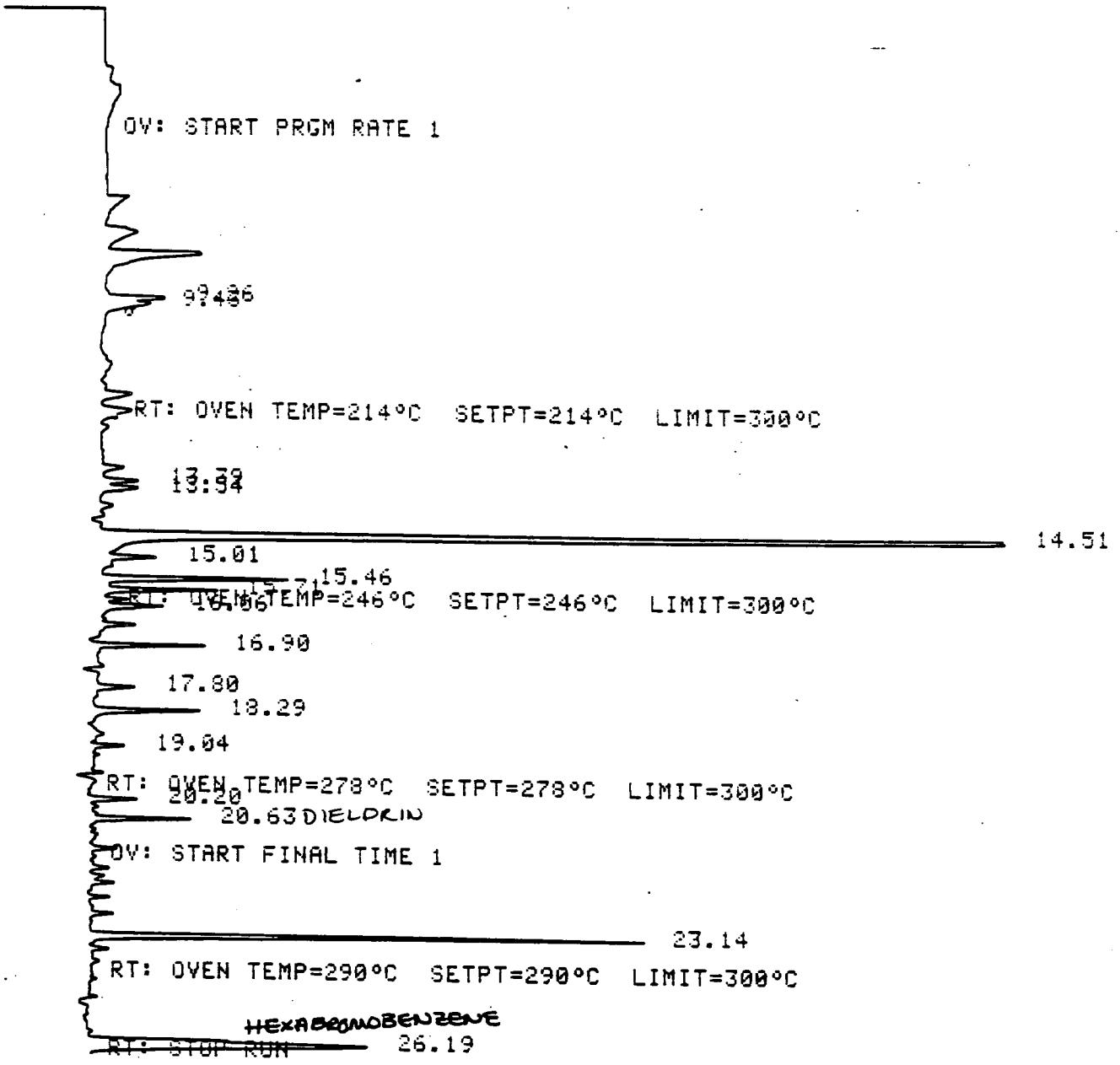
© SUPELCO, INC., Bellefonte, PA. Cat. No. 2-2887 (pad); Cat. No. 2-2888 (box of 10 pads)

---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 2202

SAMPLE ID: DUPLICATE 95L #1

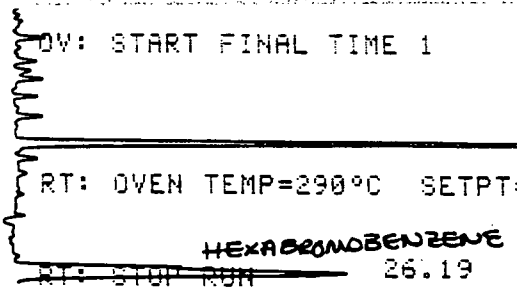
OVEN TEMP NOT READY
DET 2 TEMP NOT READY



[hp] 5880A SAMPLER INJECTION @ 22:05 JUN 26, 1989
SAMPLE # : ID CODE :
16 WG 2104
AREA % COMPENSATED ANALYSIS

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 124.69			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			

© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2-2888 (box of 10 pads)



[hp] 5880A SAMPLER INJECTION @ 22:05 JUN 26, 1989
SAMPLE # : ID CODE :
16 WG 2104
AREA % COMPENSATED ANALYSIS

134

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 124.69			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			
0.00			RT: INTG → OFF			
0.01			RP: EXTEND RT → ON			
6.00			RT: THRESHOLD → 6			
6.00			RT: INTG → ON			
9.257	521.57	BV	-----	58.41	127.15	2.086
9.434	519.08	VP	-----	43.88	126.62	2.076
13.388	181.15	BV	0.083	34.35	123.82	0.725
13.540	212.05	VP	-----	36.45	122.18	0.848
14.511	12537.70	VV	0.08	2554.07	116.38	50.149
15.013	350.08	VV	-----	59.66	114.37	1.400
15.463	930.56	VV	0.073	198.84	112.57	3.722
15.706	680.47	VV	0.084	126.72	111.60	2.722
16.057	531.11	VV	-----	71.73	110.21	2.124
16.902	550.46	PV	0.073	118.05	107.58	2.202
17.796	237.47	VV	0.088	42.07	110.00	0.950
18.288	512.34	VB	0.073	109.54	111.33	2.049
19.040	128.19	PV	-----	33.98	108.53	0.513
20.205	227.15	PH	0.071	49.92	105.89	0.909
20.628	443.37	HH	0.066	105.47	105.89	1.773
23.136	2296.38	HH	0.063	574.79	105.89	9.185
26.192	4141.92	A HH	+-----	292.03	105.89	16.567

TOTAL AREA = 25001.10
MULTIPLIER = 1

9

© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2-2888 (box of 10 pads)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSATE #1 9SL RE

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GRO SAS #: N/A SDG No.: N/A

Matrix: (soil/water) WATER Lab Sample ID: 2098 RE

Sample wt/vol: 1000 ml Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. N/A not dec. Date Extracted: 21 JUNE 89

Extraction: CONT Date Analyzed: 28 JUNE 89

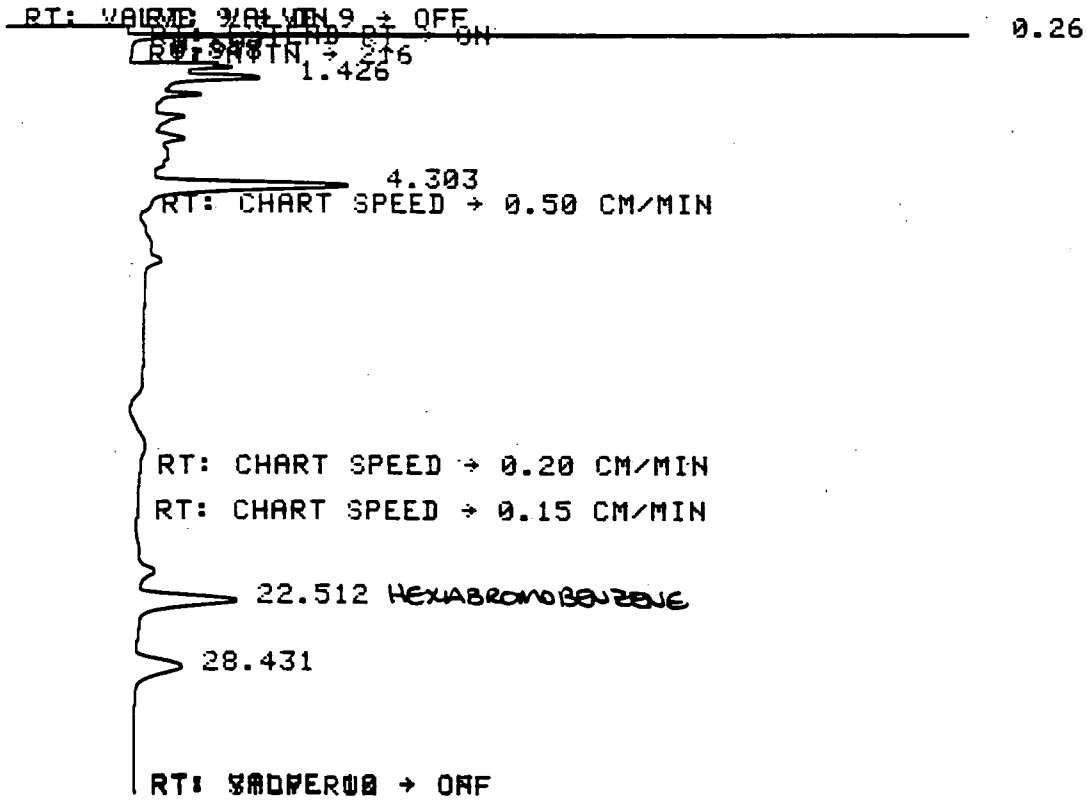
GPC Cleanup:(Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg)	ug/~~kg~~ RKL L Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 1753

SAMPLE ID: RINSATE #1 9SL



[hp] 5880A SAMPLER INJECTION @ 17:55 JUN 28, 1989
SAMPLE # : ID CODE :
12 WG2098 RE
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 209.45			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.265	401368.00	BV	0.03 *	183117.00	198.89	95.966
0.50			RT: EXTEND RT → ON			
0.697	3388.63	VV	-----*	605.65	211.60	0.810
0.848	1914.17	VV	-----	272.75	216.04	0.458
1.426	803.89	VB	-----	83.10	233.04	0.192
4.303	2513.19	VP	0.23	169.91	220.70	0.601
22.512	4987.41	BB	0.947	82.47	214.78	1.192
28.431	3264.97	BB	1.300	39.31	211.66	0.781

TOTAL AREA = 418241.00

SUPELCO, Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2-2888 (box of 10 pads)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

RINSATE #2 9SL RE

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GRO SAS #: N/A SDG No.: N/A

Matrix: (soil/water) WATER Lab Sample ID: 2099 RE

Sample wt/vol: 1000 ml Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. N/A not dec. Date Extracted: 21 JUNE 89

Extraction: CONT Date Analyzed: 28 JUNE 89

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/~~kg~~ RKL L	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

MULTIPLIER = 1

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 1836

SAMPLE ID: RINSATE #2 9SL

RT: VALVE 9 → OFF
RT: VALVE 9 → ON
RT: WIDTH → 216
0.27
1.429
1.862
4.306
RT: CHART SPEED → 0.50 CM/MIN
RT: CHART SPEED → 0.20 CM/MIN
RT: CHART SPEED → 0.15 CM/MIN
22.523 HEXABROMOBENZENE
RT: SAMPERUN → OFF

[hp] 5880A SAMPLER INJECTION @ 18:38 JUN 28, 1989
SAMPLE # : ID CODE :
13 WG2099 RE
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 207.54			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.273	756261.00	BV	0.03 *	368176.00	197.96	98.256
0.50			RT: EXTEND RT → ON			
0.698	3477.62	VV	-----	657.64	210.67	0.452
0.850	2643.20	VV	-----	430.17	215.19	0.343
1.429	681.25	VB	-----	74.33	232.52	0.089
1.862	296.04	BP	0.092	50.60	234.16	0.038
4.306	1597.29	BB	0.207	120.68	224.26	0.208
22.523	4731.18	BB	0.957	77.44	213.26	0.615

C. Standards Data

PESTICIDE / PCB STANDARDS SUMMARY

Lab Name: ER LABORATORIES Contract: 10398.03
Lab Code: ERLABS Case No: WILLOW SAS No.: N/A SDG No.: N/A
Instrument ID: 38 GC Column ID: 1.5%SP2250/1.95%SP2401
ON 100/120 SUPELCOPORT

DATE(S) OF ANALYSIS	FROM:	14 JUNE 89	DATE OF ANALYSIS	14 JUNE 89		
	TO:	14 JUNE 89	TIME OF ANALYSIS	14:16		
TIME(S) OF ANALYSIS	FROM:	00:54	EPA SAMPLE NO. (STANDARD #)	IN08		
	TO:	05:25		S422		

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR (area/ng)	RT	CALIBRATION FACTOR (area/ng)	QUANT Y/N	% D
alpha BHC	1.771	1.767	1.775	6.70E+04	1.780	7.47E+04	Y	-11.57%
beta BHC	2.652	2.647	2.657	4.77E+04	2.665	4.76E+04	Y	0.35%
delta BHC	3.092	3.086	3.098	5.30E+04	3.105	5.93E+04	Y	-11.9%
gamma BHC	2.275	2.270	2.280	5.49E+04	-	-	Y	-
Heptachlor	2.803	2.797	2.809	1.43E+05	-	-	Y	-
Aldrin	3.403	3.396	3.410	3.60E+04	-	-	Y	-
Hept. Epoxide	5.276	5.265	5.287	7.38E+04	-	-	Y	-
Endosulfan I	6.692	6.679	6.705	8.58E+04	-	-	Y	-
Dieldrin	8.245	8.229	8.261	7.31E+04	-	-	Y	-
4,4'-DDE	7.830	7.814	7.846	7.55E+04	7.860	6.98E+04	Y	7.57%
Endrin	10.058	10.038	10.078	5.17E+04	10.090	4.89E+04	Y	5.39%
Endosulfan II	12.358	12.333	12.383	7.92E+04	-	-	Y	-
4,4'-DDD	12.283	12.258	12.308	4.61E+04	12.330	4.02E+04	Y	12.89%
Endosulfan Sulf.	20.304	20.263	20.345	8.11E+04	20.367	7.32E+04	Y	9.73%
4,4'-DDT	14.842	14.812	14.872	4.05E+04	-	-	Y	-
Methoxychlor	29.323	29.264	29.382	4.33E+05	-	-	Y	-
Endrin Ketone	27.402	27.347	27.457	4.23E+04	27.466	3.61E+04	Y	14.79%
alpha Chlordane	6.435	6.422	6.448	8.94E+04	6.462	8.44E+04	Y	5.67%
gamma Chlordane	5.866	5.854	5.878	8.96E+04	5.891	8.48E+04	Y	5.33%
Toxaphene	15.428	15.397	15.459	4.55E+03	-	-	Y	-
Aroclor 1016	2.776	2.770	2.782	7.45E+03	-	-	Y	-
Aroclor 1221	-	-	-	-	-	-	Y	-
Aroclor 1232	-	-	-	-	-	-	Y	-
Aroclor 1242	2.777	2.771	2.783	6.56E+03	-	-	Y	-
Aroclor 1248	5.399	5.388	5.410	9.86E+03	-	-	Y	-
Aroclor 1254	9.896	9.876	9.916	1.14E+04	-	-	Y	-
Aroclor 1260	11.233	11.211	11.255	9.09E+03	-	-	Y	-

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

* any samples run subsequent to this standard were rerun

PESTICIDE / PCB STANDARDS SUMMARY

Lab Name: EA LABORATORIES Contract: 10388.03
Lab Code: EALABS Case No: WILLOW SAS No.: N/A SDG No.: N/A
Instrument ID: 3B GC Column ID: 1.5%SP2250/1.95%SP2401
ON 100/120 SUPELCOPORT

DATE(S) OF ANALYSIS	FROM:	14 JUNE 89			DATE OF ANALYSIS	15 JUNE 89			
	TO:	14 JUNE 89			TIME OF ANALYSIS	08:09	-08:53		
TIME(S) OF ANALYSIS	FROM:	00:54			EPA SAMPLE NO.	INDA	INDB		
	TO:	05:25			(STANDARD #)	S417	S422		

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR (area/ng)	RT	CALIBRATION FACTOR (area/ng)	QUANT Y/N	% D	
alpha BHC	1.771	1.769	1.775	6.70E+04	1.771	6.40E+04	Y	4.46%	
beta BHC	2.652	2.649	2.657	4.77E+04	2.650	4.38E+04	Y	8.36%	
delta BHC	3.092	3.077	3.098	5.30E+04	3.089	5.06E+04	Y	4.5%	
gamma BHC	2.275	2.264	2.280	5.49E+04	2.287	4.67E+04	Y	14.89%	
Heptachlor	2.803	3.386	2.809	1.43E+05	2.820	1.19E+05	Y	16.76%	*
Aldrin	3.403	5.265	3.410	3.60E+04	3.422	3.31E+04	Y	8.23%	
Hept. Epoxide	5.276	6.685	5.287	7.38E+04	5.304	6.66E+04	Y	9.76%	
Endosulfan I	6.692	8.237	6.705	8.58E+04	6.723	7.78E+04	Y	9.31%	
Dieldrin	8.245	7.022	8.261	7.31E+04	8.280	6.56E+04	Y	10.18%	
4,4'-DDE	7.830	10.048	7.846	7.55E+04	7.823	6.92E+04	Y	8.34%	
Endrin	10.058	12.346	10.078	5.17E+04	10.032	4.46E+04	Y	13.63%	
Endosulfan II	12.358	12.271	12.383	7.92E+04	12.393	6.97E+04	Y	11.98%	
4,4'-DDD	12.283	20.284	12.308	4.61E+04	12.265	4.29E+04	Y	6.91%	
Endosulfan Sulf.	20.304	14.827	20.345	8.11E+04	20.248	7.50E+04	Y	7.50%	
4,4'-DDT	14.842	29.294	14.872	4.05E+04	14.886	3.07E+04	Y	24.17%	*
Methoxychlor	29.323	27.375	29.382	4.33E+05	29.351	3.43E+05	Y	20.90%	*
Endrin Ketone	27.402	6.429	27.457	4.23E+04	27.330	3.93E+04	Y	7.00%	
alpha Chlordane	6.435	ERR	6.448	8.94E+04	6.430	8.08E+04	Y	9.64%	
gamma Chlordane	5.866	5.860	5.878	8.96E+04	5.862	8.03E+04	Y	10.35%	
Toxaphene	15.428	15.413	15.459	4.55E+03	-	-	Y	-	
Aroclor 1016	2.776	2.773	2.782	7.45E+03	-	-	Y	-	
Aroclor 1221	-	-	-	-	-	-	Y	-	
Aroclor 1232	-	-	-	-	-	-	Y	-	
Aroclor 1242	2.777	2.774	2.783	6.56E+03	-	-	Y	-	
Aroclor 1248	5.399	5.394	5.410	9.86E+03	-	-	Y	-	
Aroclor 1254	9.896	9.886	9.916	1.14E+04	-	-	Y	-	
Aroclor 1260	11.233	11.222	11.255	9.09E+03	-	-	Y	-	

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

* any samples run subsequent to this standard were rerun.

PESTICIDE / PCB STANDARDS SUMMARY

Lab Name: EA LABORATORIES Contract: 10388.03
Lab Code: EALABS Case No: WILLOW SAS No.: N/A SDG No.: N/A
Instrument ID: 50 GC Column ID: RTX-35
.25 UM OF, 30M X .25 MM ID

DATE(S) OF ANALYSIS	FROM: 26 JUNE 89	TO: 26 JUNE 89	DATE OF ANALYSIS	26 JUNE 89
TIME(S) OF ANALYSIS	FROM: 15:00	TO: 16:46	TIME OF ANALYSIS	23:52
			EPA SAMPLE NO. (STANDARD D)	IHDB 5479

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR (area/ng)	RT	CALIBRATION FACTOR (area/ng)	QUANT Y/N	% D
alpha BHC	13.810	13.782	13.838	1.59E+04	13.810	1.58E+04	N	0.09%
beta BHC	15.240	15.210	15.270	1.17E+04	15.240	1.18E+04	N	-0.69%
delta BHC	16.340	16.307	16.373	1.23E+04	16.340	1.23E+04	N	-0.4%
gamma BHC	15.040	15.010	15.070	1.43E+04	-	-	N	-
Heptachlor	16.250	16.218	16.283	2.26E+04	-	-	N	-
Aldrin	17.260	17.225	17.295	7.30E+03	-	-	N	-
Hept. Epoxide	18.780	18.742	18.818	1.37E+04	-	-	N	-
Endosulfan I	19.821	19.781	19.861	1.49E+04	-	-	N	-
Dieldrin	20.630	20.589	20.671	1.29E+04	-	-	N	-
4,4'-DDE	20.200	20.160	20.240	1.16E+04	20.200	1.13E+04	N	2.99%
Endrin	21.570	21.527	21.613	4.08E+03	21.570	5.43E+03	N	-33.34% *
Endosulfan II	22.040	21.996	22.084	1.20E+04	-	-	N	-
4,4'-DDD	21.650	21.607	21.693	8.77E+03	21.650	9.10E+03	N	-3.87%
Endosulfan Sulf.	23.350	23.303	23.397	1.13E+04	23.350	1.04E+04	N	8.02%
4,4'-DDT	22.540	22.495	22.585	7.90E+03	-	-	N	-
Methoxychlor	24.980	24.930	25.030	3.72E+04	-	-	N	-
Endrin Ketone	25.910	25.858	25.962	6.89E+03	25.910	5.80E+03	N	15.79%
alpha Chlordane	19.720	19.681	19.759	1.69E+04	19.720	1.54E+04	N	8.84%
gamma Chlordane	19.300	19.261	19.339	1.77E+04	19.300	1.64E+04	N	7.58%
Toxaphene	-	-	-	-	-	-	N	-
Aroclor 1016	16.120	16.088	16.152	1.61E+03	-	-	N	-
Aroclor 1221	-	-	-	-	-	-	N	-
Aroclor 1232	-	-	-	-	-	-	N	-
Aroclor 1242	16.120	16.088	16.152	1.38E+03	-	-	N	-
Aroclor 1248	-	-	-	-	-	-	N	-
Aroclor 1254	-	-	-	-	-	-	N	-
Aroclor 1260	21.450	21.407	21.493	9.63E+02	-	-	N	-

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

*No Endrin was present in these samples, and this standards summary pertains to the confirmation only.

PESTICIDE / PCB STANDARDS SUMMARY

Lab Name: EA LABORATORIES — Contract: 10398.03
Lab Code: EALABS — Case No: WILLOW — SAS No.: N/A — SDG No.: N/A
Instrument ID: 50 — GC Column ID: RTX-35
.25 UM DF, 30M X .25 MM ID

DATE(S) OF ANALYSIS	FROM:	26 JUNE 89	DATE OF ANALYSIS	27 JUNE 89	
	TO:	26 JUNE 89	TIME OF ANALYSIS	05:46	-06:22
TIME(S) OF ANALYSIS	FROM:	00:54	EPA SAMPLE NO.	INDA	INDB
	TO:	16:46	(STANDARD #)	5454	5479

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR (area/ng)	RT	CALIBRATION FACTOR (area/ng)	QUANT Y/N	% D	
alpha BHC	13.810	1.769	1.775	6.70E+04	13.800	1.61E+04	N	-1.86%	
beta BHC	15.240	2.649	2.657	4.77E+04	15.240	1.19E+04	N	-1.17%	
delta BHC	16.340	3.077	3.098	5.30E+04	16.330	1.25E+04	N	-1.8%	
gamma BHC	15.040	2.264	2.280	5.49E+04	15.030	1.39E+04	N	3.15%	
Heptachlor	16.25	3.386	2.809	1.43E+05	16.240	1.87E+04	N	16.95%	
Aldrin	17.260	5.265	3.410	3.60E+04	17.250	6.59E+03	N	9.82%	
Hept. Epoxide	18.780	6.685	5.287	7.38E+04	18.780	1.20E+04	N	12.86%	
Endosulfan I	19.821	8.237	6.705	8.58E+04	19.820	1.25E+04	N	16.14%	
Dieldrin	20.630	7.822	8.261	7.31E+04	20.620	1.05E+04	N	18.66%	
4,4'-DDE	20.200	10.048	7.846	7.55E+04	20.200	1.07E+04	N	8.01%	
Endrin	21.570	12.346	10.078	5.17E+04	21.560	9.84E+03	N	-18.75%	
Endosulfan II	22.040	12.271	12.383	7.92E+04	22.030	9.44E+03	N	21.36%	*
4,4'-DDD	21.650	20.284	12.308	4.61E+04	21.650	8.11E+03	N	7.53%	
Endosulfan Sulf.	23.350	14.827	20.345	8.11E+04	23.340	9.03E+03	N	20.06%	*
4,4'-DDT	22.540	29.294	14.872	4.05E+04	22.530	5.83E+03	N	26.18%	*
Methoxychlor	24.980	27.375	29.382	4.33E+05	24.970	3.84E+04	N	-3.04%	
Endrin Ketone	25.910	6.429	27.457	4.23E+04	25.910	5.33E+03	N	22.59%	*
alpha Chlordane	19.720	ERR	6.448	8.94E+04	19.710	1.34E+04	N	20.68%	*
gamma Chlordane	19.300	5.860	5.878	8.96E+04	19.300	1.45E+04	N	17.91%	
Toxaphene	-	-	-	-	-	-	N	-	
Aroclor 1016	16.120	16.088	16.152	1.61E+03	-	-	N	-	
Aroclor 1221	-	-	-	-	-	-	N	-	
Aroclor 1232	-	-	-	-	-	-	N	-	
Aroclor 1242	16.120	16.088	16.152	1.38E+03	-	-	N	-	
Aroclor 1248	-	-	-	-	-	-	N	-	
Aroclor 1254	-	-	-	-	-	-	N	-	
Aroclor 1260	21.450	21.407	21.493	9.63E+02	-	-	N	-	

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

* any samples run subsequent to this standard were rerun

PESTICIDE / PCB STANDARDS SUMMARY

Lab Name: EA LABORATORIES
Lab Code: EALABS Case No: SW00 RI
Instrument ID: 3B

Contract: 10800.05
SAS No.: N/A SDG No.: D2
GC Column ID: DN 100/120 supelcoport
DN 100/120 supelcoport

DATE(S) OF ANALYSIS	FROM:	28 JUN 89		DATE OF ANALYSIS	28 JUN 89	28 JUN 89		
	TO:	28 JUN 89		TIME OF ANALYSIS	22:17	23:01		
TIME(S) OF ANALYSIS	FROM:	08:59		EPA SAMPLE NO. (STANDARD #)	IN0A S-454	IN0B S-479		
	TO:	23:01						

COMPOUND	RT	RT WINDOW FROM	RT WINDOW TO	CALIBRATION FACTOR (area/ng)	RT	CALIBRATION FACTOR (area/ng)	QUANT Y/N	% D
alpha BHC	1.751	1.716	1.786	1.03E+05	1.761	1.03E+05	N	0.67%
beta BHC	2.616	2.564	2.668	7.81E+04	2.628	7.70E+04	N	1.47%
delta BHC	3.049	2.988	3.110	8.19E+04	3.062	8.12E+04	N	0.81%
gamma BHC	2.252	2.207	2.297	8.60E+04	2.257	8.47E+04	N	1.52%
Heptachlor	2.776	2.720	2.832	2.23E+05	2.784	2.16E+05	N	3.19%
Aldrin	3.370	3.303	3.437	1.15E+05	3.379	1.16E+05	N	-0.76%
Hept. Epoxide	5.214	5.110	5.318	1.22E+05	5.232	1.16E+05	N	4.73%
Endosulfan I	6.612	6.480	6.744	1.44E+05	6.629	1.42E+05	N	1.25%
Dieldrin	8.143	7.980	8.306	1.22E+05	8.163	1.23E+05	N	-0.79%
4,4'-DDE	7.725	7.571	7.880	1.26E+05	7.760	1.26E+05	N	0.50%
Endrin	9.874	9.677	10.071	4.50E+04	9.899	3.99E+04	N	11.32%
Endosulfan II	12.191	11.947	12.435	1.40E+05	12.217	1.39E+05	N	0.44%
4,4'-DDD	12.107	11.865	12.349	7.69E+04	12.154	7.69E+04	N	-0.06%
Endosulfan Sulf.	19.976	19.576	20.376	1.33E+05	20.044	1.33E+05	N	0.62%
4,4'-DDT	14.642	14.349	14.935	5.52E+04	14.678	5.69E+04	N	-3.01%
Methoxychlor	28.880	28.302	29.458	5.61E+05	28.952	5.60E+05	N	0.27%
Endrin Ketone	26.974	26.435	27.513	8.03E+04	27.062	8.14E+04	N	-1.44%
alpha Chlordane	6.350	6.223	6.477	1.50E+05	6.378	1.58E+05	N	-5.20%
gamma Chlordane	5.788	5.672	5.904	1.48E+05	5.815	1.65E+05	N	-11.26%
Toxaphene	8.156	7.993	8.319	4.88E+03				
Aroclor 1016	2.749	2.694	2.804	7.25E+03				
Aroclor 1221								
Aroclor 1232								
Aroclor 1242	2.741	2.686	2.796	7.35E+03				
Aroclor 1248	2.750	2.695	2.805	4.63E+03				
Aroclor 1254	6.162	6.039	6.285	9.73E+03				
Aroclor 1260	11.101	10.879	11.323	8.09E+03				

Under QNT Y/N: enter Y if quantitation was performed, N if not performed.
%D must be less than or equal to 15.0% for quantitation, and less than or equal to 20.0% for confirmation.

Note: Determining that no compounds were found above the CRQL is a form of quantitation, and therefore at least one column must meet the 15.0% criteria

For multicomponent analytes, the single largest peak that is characteristic of the component should be used to establish retention time and %D. Identification of such analytes is based primarily on pattern recognition.

* any samples run subsequent to this standard were rerun

D. Raw QC Data

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

METHOD BLK

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GRO SAS #: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: BLK 700

Sample wt/vol: 10.13 g Lab File ID: WILLOW

Level: (low/med) LOW Date Received: N/A

% Moisture: dec. N/A not dec. Date Extracted: 4 MAY 89

Extraction: SOXHLET Date Analyzed: 14 JUNE 89

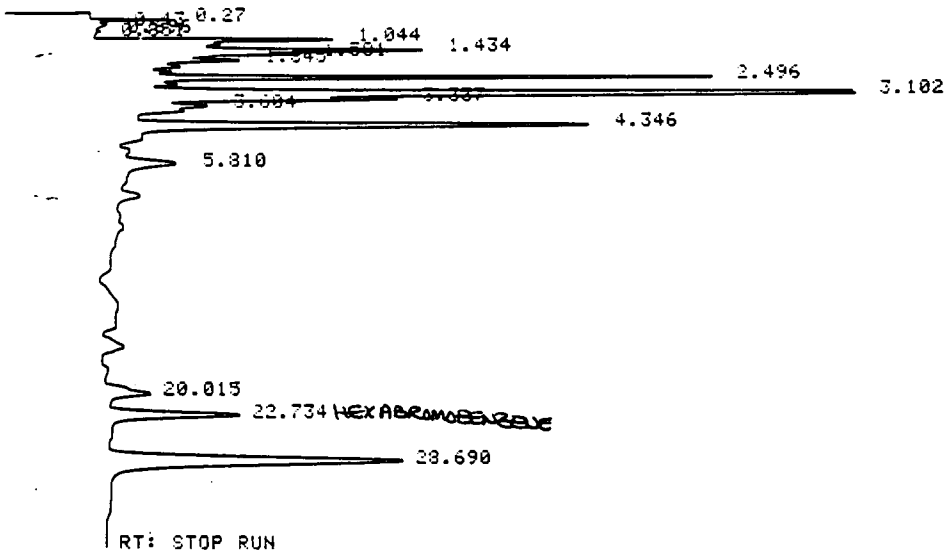
GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg	Q
319-84-6	alpha-BHC	2.00	U
319-85-7	beta-BHC	2.00	U
319-86-8	delta-BHC	2.00	U
58-89-9	gamma-BHC (Lindane)	2.00	U
76-44-8	Heptachlor	2.00	U
309-00-2	Aldrin	2.00	U
1024-57-3	Heptachlor epoxide	2.00	U
959-98-8	Endosulfan I	2.00	U
60-57-1	Dieldrin	5.0	U
72-55-9	4,4'-DDE	5.0	U
72-20-8	Endrin	5.0	U
33213-65-9	Endosulfan II	5.0	U
72-54-8	4,4'-DDD	5.0	U
1031-07-8	Endosulfan sulfate	5.0	U
50-29-3	4,4'-DDT	5.0	U
72-43-5	Methoxychlor	24.0	U
53494-70-5	Endrin ketone	5.0	U
5103-71-9	alpha-Chlordane	24.0	U
5103-74-2	gamma-Chlordane	24.0	U
8001-35-2	Toxaphene	48.0	U
12674-11-2	Aroclor-1016	24.0	U
11104-28-2	Aroclor-1221	24.0	U
11141-16-5	Aroclor-1232	24.0	U
53469-21-9	Aroclor-1242	24.0	U
12672-29-6	Aroclor-1248	24.0	U
11097-69-1	Aroclor-1254	48.0	U
11096-82-5	Aroclor-1260	48.0	U

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 607

SAMPLE ID: METHOD BLANK



[hp] 5880A SAMPLER INJECTION @ 06:10 JUN 14, 1989
SAMPLE # : ID CODE :
11 BL700
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 220.78			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.265	62868.40	BV	0.041	23726.00	209.16	30.890
0.426	37572.80	VV	-----*	4919.19	210.36	18.461
0.50			RT: EXTEND RT → ON			
0.696	11828.00	VV	-----	2646.29	212.38	5.812
0.851	5017.17	VV	-----	867.67	213.53	2.465
1.044	1793.76	VV	-----	298.75	214.97	0.881
1.434	3731.07	VV	-----	407.22	217.88	1.833
1.581	2482.07	VV	-----	252.06	218.98	1.220
1.845	1687.92	VV	-----	176.08	220.95	0.829
2.496	6123.96	VV	0.127	752.84	225.81	3.009
3.102	13173.29	VV	-----	1131.10	230.33	6.473
3.337	3277.70	VV	-----	357.62	232.08	1.610
3.604	1407.40	VV	-----	122.56	234.07	0.692
4.346	8130.17	VV	0.217	587.05	239.62	3.995
5.810	1334.05	VB	0.307	68.14	250.53	0.655
20.015	4067.03	BH	1.136	56.05	231.18	1.998
22.734	9605.62	HH	0.922	163.08	231.18	4.720
28.690	29422.50	HH	1.259	365.93	231.18	14.457

TOTAL AREA = 203523.00
MULTIPLIER = 1

140

5 046

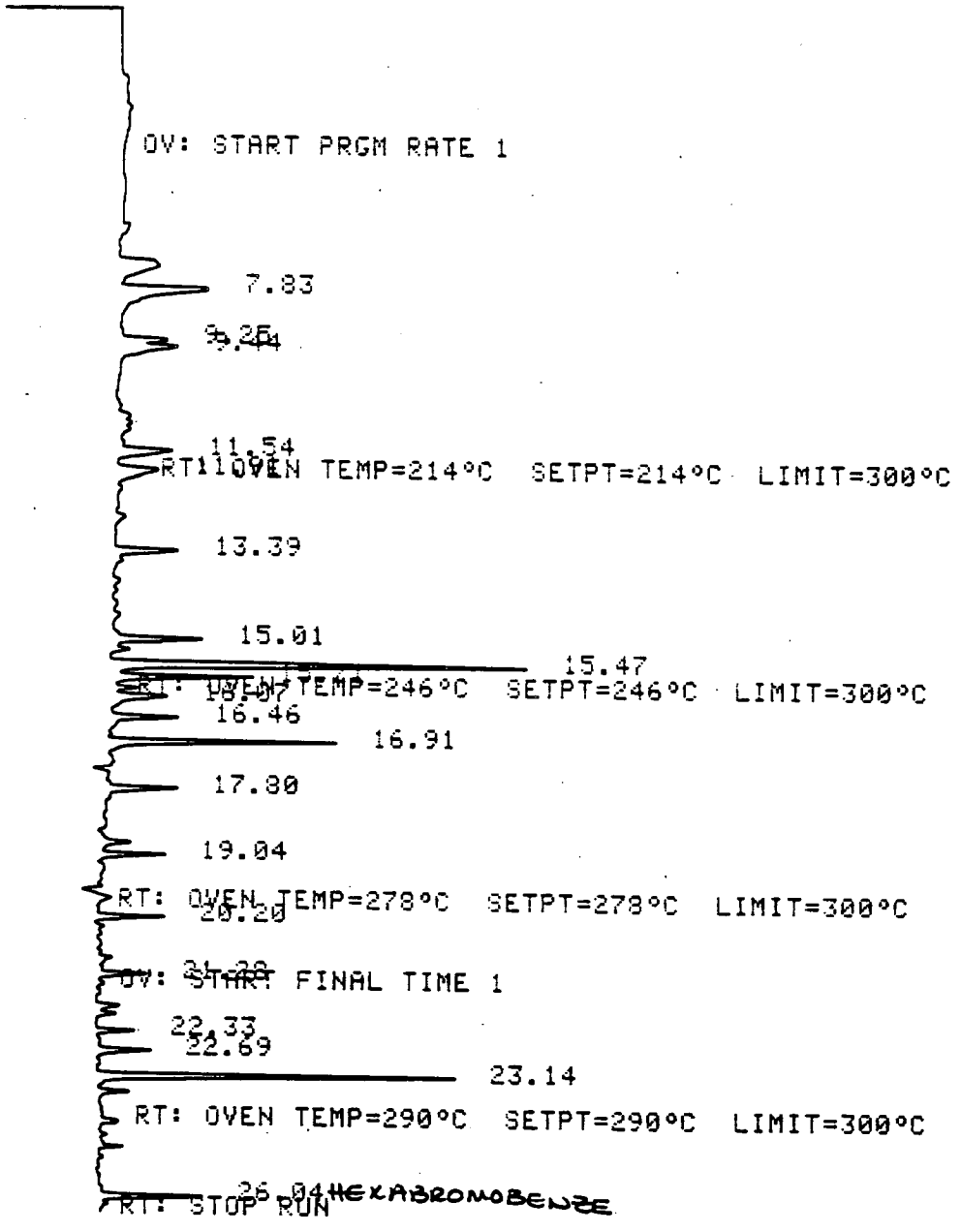
© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad): Cat. No. 2-2888 (box of 10 pads)

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 1718

SAMPLE ID: METHOD BLANK

OVEN TEMP NOT READY
DET 2 TEMP NOT READY

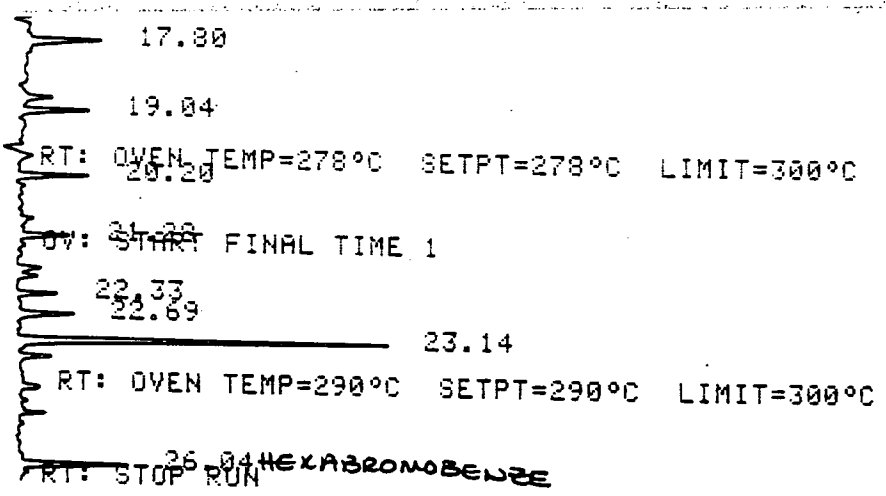


[hp] 5880A SAMPLER INJECTION @ 17:22 JUN 26, 1989
SAMPLE # : ID CODE :
8 BLK 700
AREA % COMPENSATED ANALYSIS

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %

118

5 047



[hp] 5880A SAMPLER INJECTION @ 17:22 JUN 26, 1989
SAMPLE # : ID CODE :
8 BLK 700
AREA % COMPENSATED ANALYSIS

118

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 116.82			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			
0.00			RT: INTG → OFF			
0.01			RP: EXTEND RT → ON			
6.00			RT: THRESHOLD → 6			
6.00			RT: INTG → ON			
7.834	900.18	BB	0.192	73.36	121.46	8.346
9.255	347.26	BV	-----	40.63	117.04	3.219
9.442	625.83	VP	-----	49.88	116.45	5.802
11.545	384.29	VV	0.124	48.47	112.77	3.563
11.911	377.72	VV	0.161	36.83	112.30	3.502
13.393	335.32	BV	0.092	57.25	110.30	3.109
15.014	478.25	VV	0.091	82.69	106.37	4.434
15.467	1730.00	VV	0.072	376.25	105.26	16.039
15.709	582.78	VV	0.076	120.82	104.68	5.403
16.073	408.28	VV	0.12	52.94	103.80	3.785
16.462	378.73	VV	0.092	64.29	102.85	3.511
16.907	956.31	VV	0.07	207.04	101.77	8.866
17.797	320.70	VV	0.076	66.05	99.61	2.973
19.040	237.44	VP	0.063	58.89	96.59	2.201
20.199	233.22	BP	0.060	60.57	94.81	2.162
21.277	183.50	HH	0.064	45.17	93.95	1.701
22.327	134.56	HH	0.060	35.04	93.95	1.247
22.686	244.34	HH	0.078	48.99	93.95	2.265
23.140	1314.28	HH	0.064	324.00	93.95	12.185
26.039	613.18	HH	0.099	96.64	93.95	5.685

TOTAL AREA = 10786.20
MULTIPLIER = 1

38 (box of 10 pads)
SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2-

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

METHOD BLK RE

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GRO SAS #: N/A SDG No.: N/A

Matrix: (soil/water) WATER Lab Sample ID: BLK 812 RE

Sample wt/vol: 1000 ml Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. N/A not dec. Date Extracted: 21 JUNE 89

Extraction: CONT Date Analyzed: 28 JUNE 89

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

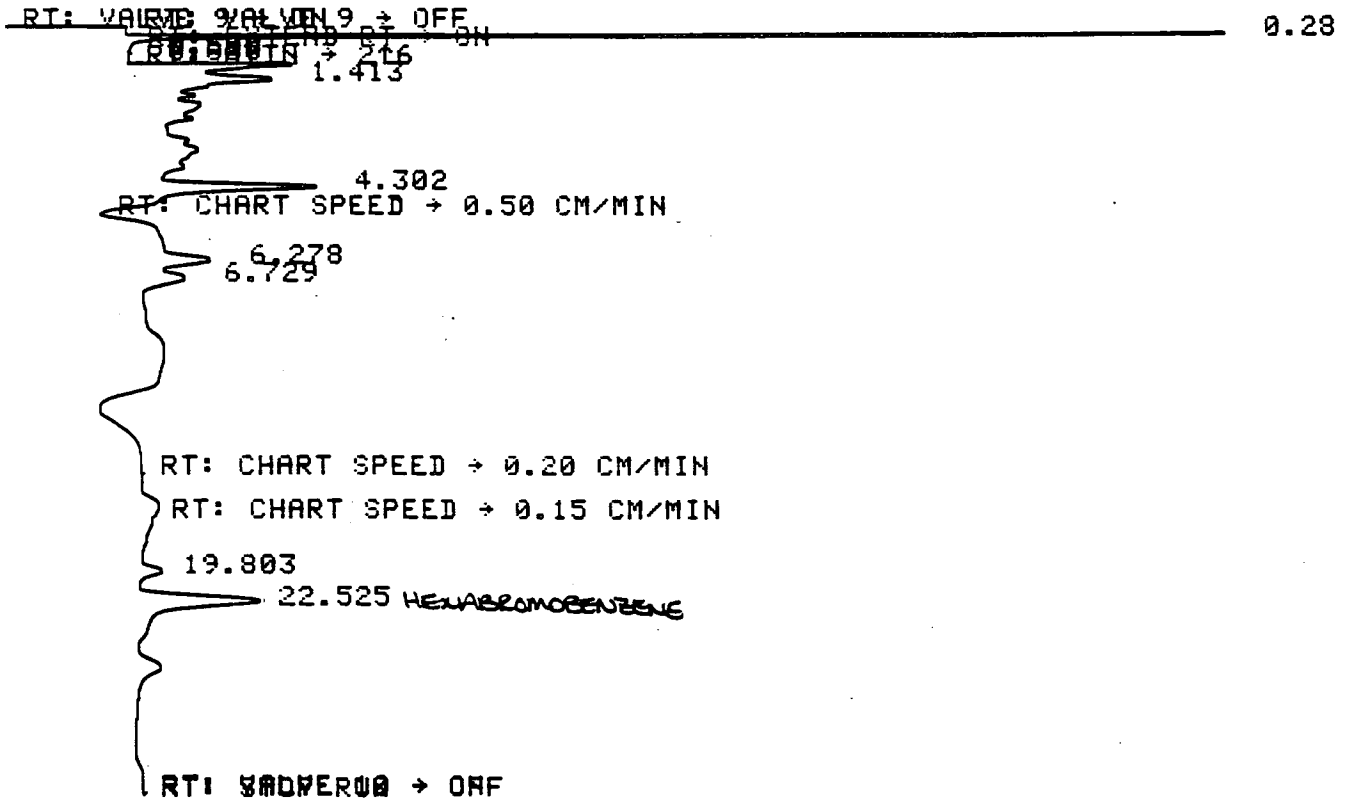
CONCENTRATION UNITS: (ug/L or ug/Kg) ug/~~kg~~ RKL L

CAS NO.	COMPOUND	ug/L or ug/Kg	Q
319-84-6	alpha-BHC	0.05	U
319-85-7	beta-BHC	0.05	U
319-86-8	delta-BHC	0.05	U
58-89-9	gamma-BHC (Lindane)	0.05	U
76-44-8	Heptachlor	0.05	U
309-00-2	Aldrin	0.05	U
1024-57-3	Heptachlor epoxide	0.05	U
959-98-8	Endosulfan I	0.05	U
60-57-1	Dieldrin	0.10	U
72-55-9	4,4'-DDE	0.10	U
72-20-8	Endrin	0.10	U
33213-65-9	Endosulfan II	0.10	U
72-54-8	4,4'-DDD	0.10	U
1031-07-8	Endosulfan sulfate	0.10	U
50-29-3	4,4'-DDT	0.10	U
72-43-5	Methoxychlor	0.50	U
53494-70-5	Endrin ketone	0.10	U
5103-71-9	alpha-Chlordane	0.50	U
5103-74-2	gamma-Chlordane	0.50	U
8001-35-2	Toxaphene	1.00	U
12674-11-2	Aroclor-1016	0.50	U
11104-28-2	Aroclor-1221	0.50	U
11141-16-5	Aroclor-1232	0.50	U
53469-21-9	Aroclor-1242	0.50	U
12672-29-6	Aroclor-1248	0.50	U
11097-69-1	Aroclor-1254	1.00	U
11096-82-5	Aroclor-1260	1.00	U

---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 1709

SAMPLE ID: METHOD BLANK



[hp] 5880A SAMPLER INJECTION @ 17:11 JUN 28, 1989
SAMPLE # : ID CODE :
11 BLK812 RE
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 205.84			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.277	793773.00	BV	0.03 *	368189.00	195.13	96.803
0.50			RT: EXTEND RT → ON			
0.630	1064.71	VV	-----	319.81	194.11	0.130
0.695	2459.09	VV	-----	432.95	193.92	0.300
0.850	3821.10	VV	-----	559.57	193.47	0.466
1.413	2096.59	VV	-----	132.80	191.83	0.256
4.302	3924.91	VP	-----	177.41	183.45	0.479
6.278	2223.53	VV	-----	89.46	184.50	0.271
6.729	1988.79	VV	-----	66.79	185.60	0.243
19.803	948.06	BP	0.784	18.94	214.14	0.116
22.525	7686.63	PP	1.19	108.76	211.98	0.937

TOTAL AREA = 819986.00
MULTIPLIER = 1

SUPELCO, Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2-2888 (box of 10 pads)

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUPLICATE 9SL#1 MS

Lab Name: EA LABORATORIES Contract: 10388.0

Lab Code: EALABS Case #: WILLOW GR SAS #: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: 2104 MS

Sample wt/vol: 10.09 g Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. 17.5 not dec. Date Extracted: 4 MAY 89

Extraction: SOXHLET Date Analyzed: 14 JUNE 89

GPC Cleanup:(Y/N) N pH: Dilution Factor: 1

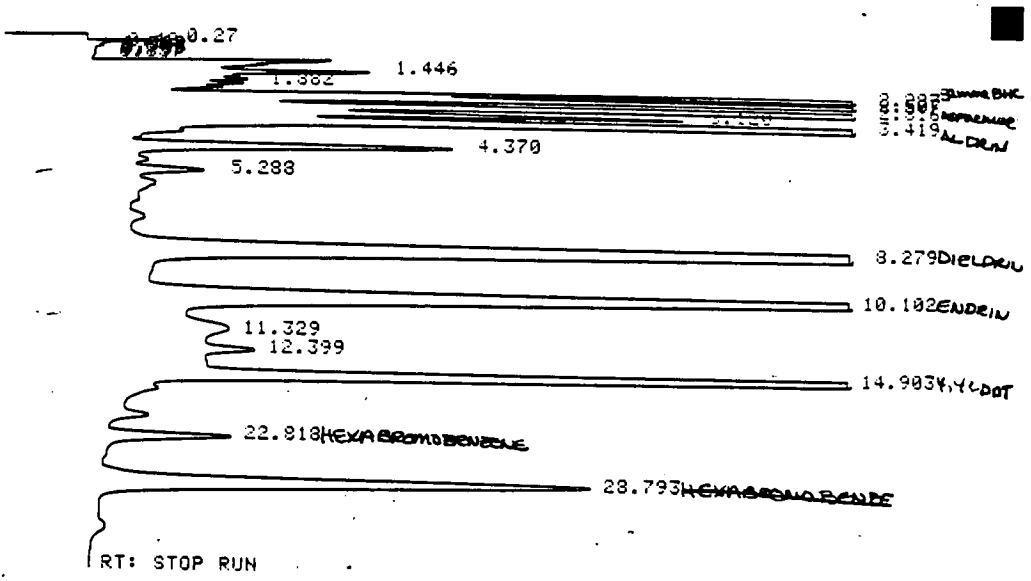
CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg

CAS NO.	COMPOUND	ug/kg	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC (Lindane)	37.0	
76-44-8	Heptachlor	15.0	
309-00-2	Aldrin	29.1	
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	28.1	
72-55-9	4,4'-DDE	5.9	U
72-20-8	Endrin	25.8	
33213-65-9	Endosulfan II	5.9	U
72-54-8	4,4'-DDD	5.9	U
1031-07-8	Endosulfan sulfate	5.9	U
50-29-3	4,4'-DDT	87.0	
72-43-5	Methoxychlor	29.0	U
53494-70-5	Endrin ketone	5.9	U
5103-71-9	alpha-Chlordane	29.0	U
5103-74-2	gamma-Chlordane	29.0	U
8001-35-2	Toxaphene	59.0	U
12674-11-2	Aroclor-1016	29.0	U
11104-28-2	Aroclor-1221	29.0	U
11141-16-5	Aroclor-1232	29.0	U
53469-21-9	Aroclor-1242	29.0	U
12672-29-6	Aroclor-1248	29.0	U
11097-69-1	Aroclor-1254	59.0	U
11096-82-5	Aroclor-1260	59.0	U

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 1159

SAMPLE ID: DUPLICATE 9GL #1 Matrix Spike



[hp] 5880A SAMPLER INJECTION @ 12:01 JUN 14, 1989
SAMPLE # : ID CODE :
19 WG2104MS
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 261.14			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.267	69955.70	BV	-----*	22230.50	251.79	11.902
0.420	24944.40	VV	-----	3964.17	253.01	4.244
0.50			RT: EXTEND RT → ON			
0.582	11799.70	VV	-----	2094.84	254.34	2.008
0.703	8554.31	VV	-----	2303.09	255.31	1.455
0.769	7800.02	VV	-----	2003.22	255.84	1.327
0.857	6663.32	VV	-----	1339.38	256.56	1.134
1.446	3662.08	VV	-----	341.47	261.32	0.623
1.882	1534.81	VV	-----	185.05	264.84	0.261
2.287	51410.60	VV	0.091	8871.25	268.11	8.747
2.507	34961.50	VV	0.100	5501.41	269.89	5.948
2.816	54209.80	VV	0.118	7193.83	272.39	9.223
3.120	7578.23	VV	-----	708.07	274.84	1.289
3.419	52838.10	VV	0.141	5859.75	277.26	8.990
4.370	5698.29	VV	0.214	416.50	284.95	0.970
5.288	1626.99	VV	-----	107.16	292.37	0.277
8.279	51787.00	PV	0.290	2797.68	319.34	8.811
10.102	33618.00	BV	0.358	1469.27	329.89	5.720
11.329	5062.99	VV	-----	107.48	325.22	0.861
12.399	8315.91	VV	-----	142.19	321.14	1.415
14.903	88826.80	VV	0.547	2542.51	311.60	15.113
22.818	8340.87	PB	0.863	151.39	286.49	1.419
28.793	48566.10	BP	1.265	601.12	277.51	8.263

TOTAL AREA = 587756.00
MULTIPLIER = 1

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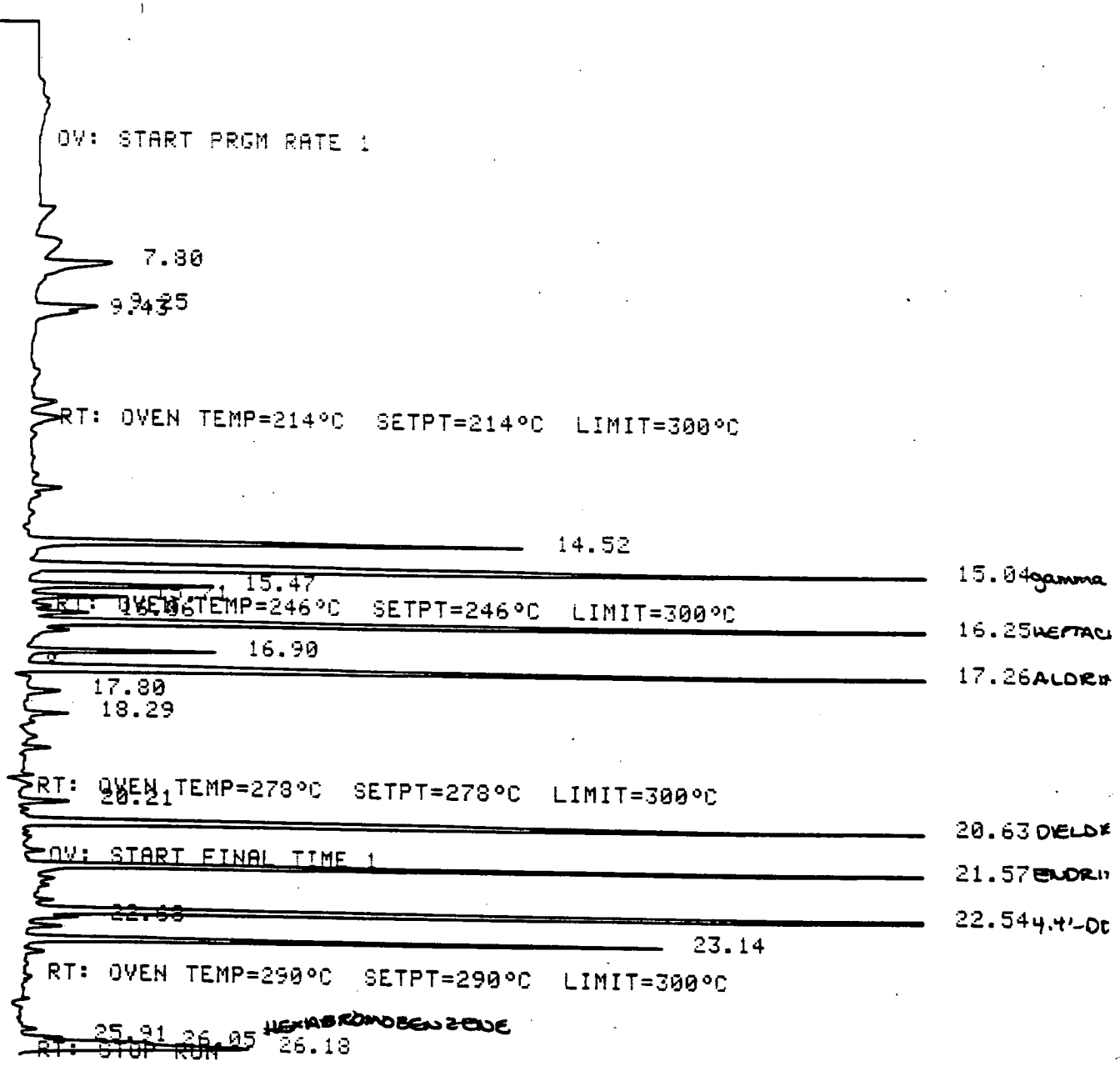
********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 2237

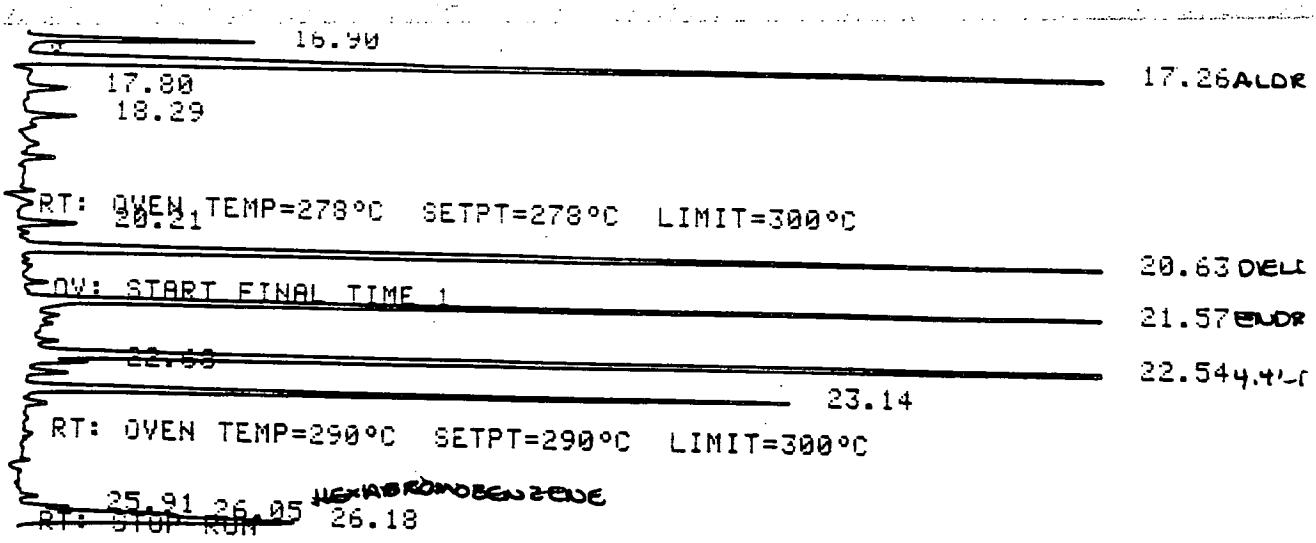
SAMPLE ID: DUPLICATE 93c #1 Matrix Spike

OVEN TEMP NOT READY
DET 2 TEMP NOT READY



[hp] 5880A SAMPLER INJECTION @ 22:41 JUN 26, 1989
SAMPLE # : ID CODE :
17 WG 2104 MS
AREA % COMPENSATED ANALYSIS

SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (pad); Cat. No. 2-2888 (box of 10 pads)



[hp] 5880A SAMPLER INJECTION @ 22:41 JUN 26, 1989
SAMPLE # : ID CODE :
17 WG 2104 MS
AREA % COMPENSATED ANALYSIS

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 126.70			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			
0.00			RT: INTG → OFF			
0.01			RP: EXTEND RT → ON			
6.00			RT: THRESHOLD → 6			
6.00			RT: INTG → ON			
7.800	1017.35	BB	SYM\	68.72	133.00	1.625
9.247	562.18	BV	-----	61.55	125.53	0.898
9.430	452.34	VB	-----	42.10	125.22	0.723
14.517	2546.88	BV	0.077	517.49	118.96	4.069
15.041	9091.62	BV	0.070	2020.75	119.03	14.523
15.465	838.20	BV	0.069	190.41	117.08	1.339
15.708	438.56	VV	0.071	96.68	116.85	0.701
16.058	337.75	VV	-----	62.03	116.52	0.540
16.251	8519.67	VV	0.064	2078.48	116.33	13.610
16.901	775.24	BV	0.063	194.12	115.93	1.238
17.260	8039.68	BP	0.059	2151.01	111.58	12.843
17.800	144.41	BB	0.071	31.96	116.47	0.231
18.292	201.86	BV	0.072	43.71	113.87	0.322
20.210	219.78	BP	0.069	49.89	109.05	0.351
20.627	7891.12	VB	0.053	2324.92	112.26	12.606
21.569	4078.56	BV	0.057	1118.87	117.34	6.515
22.540	11181.90	VV	0.056	3112.44	117.25	17.862
22.681	226.76	VV	-----	51.70	117.23	0.362
23.137	2511.14	BB	0.059	664.70	118.01	4.011
25.914	183.18	BV	-----	39.97	114.32	0.293
26.047	634.24	VV	-----	133.50	113.70	1.013
26.184	2707.53 A	VP	-----	235.74	113.07	4.325

TOTAL AREA = 62599.90
MULTIPLIER = 1

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5 054

2888 (box of 10 pads)
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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

DUPLICATE 9SL#1 MSD

Lab Name: EA LABORATORIES Contract: 10388.03

Lab Code: EALABS Case #: WILLOW GRO SAS #: N/A SDG No.: N/A

Matrix: (soil/water) SOIL Lab Sample ID: 2104 MSD

Sample wt/vol: 10.27 g Lab File ID: WILLOW

Level: (low/med) LOW Date Received: 3 MAY 89

% Moisture: dec. 17.5 not dec. Date Extracted: 4 MAY 89

Extraction: SOXHLET Date Analyzed: 14 JUNE 89

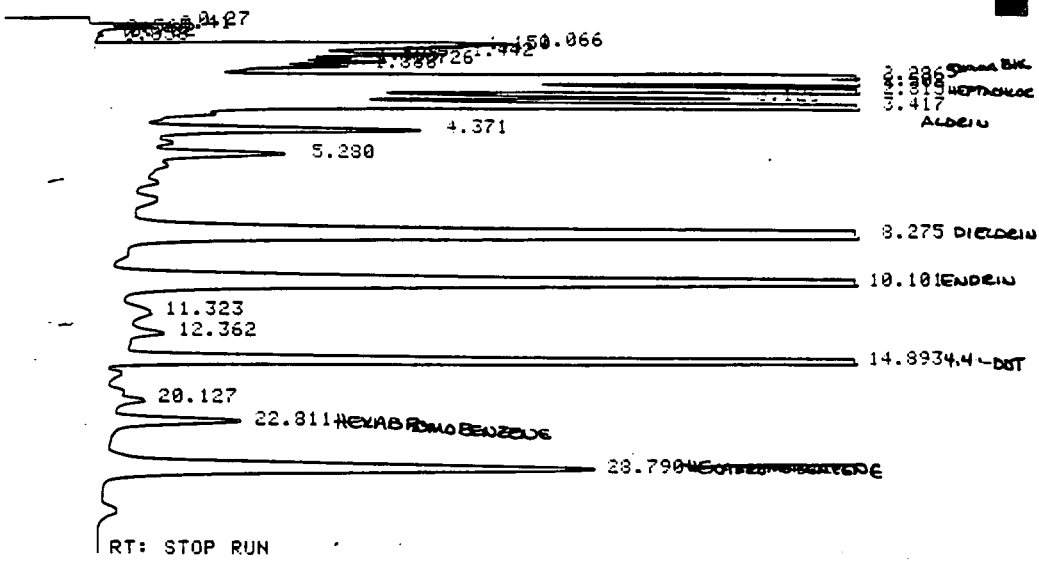
GPC Cleanup: (Y/N) N pH: Dilution Factor: 1

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) ug/kg	Q
319-84-6	alpha-BHC	2.9	U
319-85-7	beta-BHC	2.9	U
319-86-8	delta-BHC	2.9	U
58-89-9	gamma-BHC (Lindane)	38.0	
76-44-8	Heptachlor	15.0	
309-00-2	Aldrin	29.0	
1024-57-3	Heptachlor epoxide	2.9	U
959-98-8	Endosulfan I	2.9	U
60-57-1	Dieldrin	27.0	U
72-55-9	4,4'-DDE	5.9	
72-20-8	Endrin	24.0	
33213-65-9	Endosulfan II	5.9	U
72-54-8	4,4'-DDD	5.9	U
1031-07-8	Endosulfan sulfate	5.9	U
50-29-3	4,4'-DDT	75.0	
72-43-5	Methoxychlor	29.0	U
53494-70-5	Endrin ketone	5.9	U
5103-71-9	alpha-Chlordane	29.0	U
5103-74-2	gamma-Chlordane	29.0	U
8001-35-2	Toxaphene	59.0	U
12674-11-2	Aroclor-1016	29.0	U
11104-28-2	Aroclor-1221	29.0	U
11141-16-5	Aroclor-1232	29.0	U
53469-21-9	Aroclor-1242	29.0	U
12672-29-6	Aroclor-1248	29.0	U
11097-69-1	Aroclor-1254	59.0	U
11096-82-5	Aroclor-1260	59.0	U

********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #3 / SIGNAL B
COLUMN TYPE - 1.5% SP-2250 / 1.95% SP-2401
ON 100/120 SUPELCOPORT
COLUMN DIMENSIONS - 2 METERS X 2MM ID
INJECTION TYPE - AUTOMATIC / HP7672A
INJECTION VOLUME - 5 MICROLITERS
TIME: 1244

SAMPLE ID: DUPLICATE 9SL #1



[hp] 5880A SAMPLER INJECTION @ 12:46 JUN 14, 1989
SAMPLE # : ID CODE :
20 WG2104MSD
AREA %

RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 276.13			
0.00			THRESHOLD @ START RUN = 6			
0.00			PEAK WIDTH @ START RUN = 0.04			
0.01			RP: EXTEND RT → ON			
0.267	79680.80	BV	-----*	24246.30	267.51	9.835
0.408	103249.00	VV	-----	18760.60	268.59	12.744
0.50			RT: EXTEND RT → ON			
0.565	10516.70	VV	-----	2444.43	269.80	1.298
0.702	18974.50	VV	-----	3553.22	270.86	2.342
0.858	10133.50	VV	-----	1573.68	272.06	1.251
1.066	2841.82	VV	-----	517.27	273.67	0.351
1.150	3471.19	VV	-----	451.51	274.32	0.428
1.442	3676.16	VV	-----	428.81	276.56	0.454
1.585	1973.12	VV	-----	309.43	277.67	0.244
1.726	2754.56	VV	-----	351.56	278.75	0.340
1.888	3971.44	VV	-----	303.90	280.01	0.490
2.286	53836.80	VV	0.092	9140.56	283.07	6.645
2.502	163157.00	VV	0.102	25066.80	284.74	20.138
2.815	56534.30	VV	0.120	7352.37	287.15	6.978
3.126	8379.02	VV	-----	762.69	289.55	1.034
3.417	53276.30	VV	0.142	5858.11	291.79	6.576
4.371	5322.87	VV	-----	370.55	299.15	0.657
5.280	3081.96	VV	-----	197.48	306.15	0.380
8.275	51382.60	BV	0.289	2782.01	315.35	6.342
10.101	32407.60	BV	0.345	1472.64	300.66	4.000
11.323	1269.41	VV	-----	39.01	305.65	0.157
12.362	2127.35	VV	-----	50.72	309.89	0.263
14.893	77529.80	BP	0.508	2390.42	303.98	9.569
20.127	2712.88	VV	-----	43.87	293.65	0.335
22.811	9501.79	VB	0.944	157.58	294.74	1.173
28.790	48425.40	BB	1.264	600.03	290.19	5.977

TOTAL AREA = 810188.00
MULTIPLIER = 1

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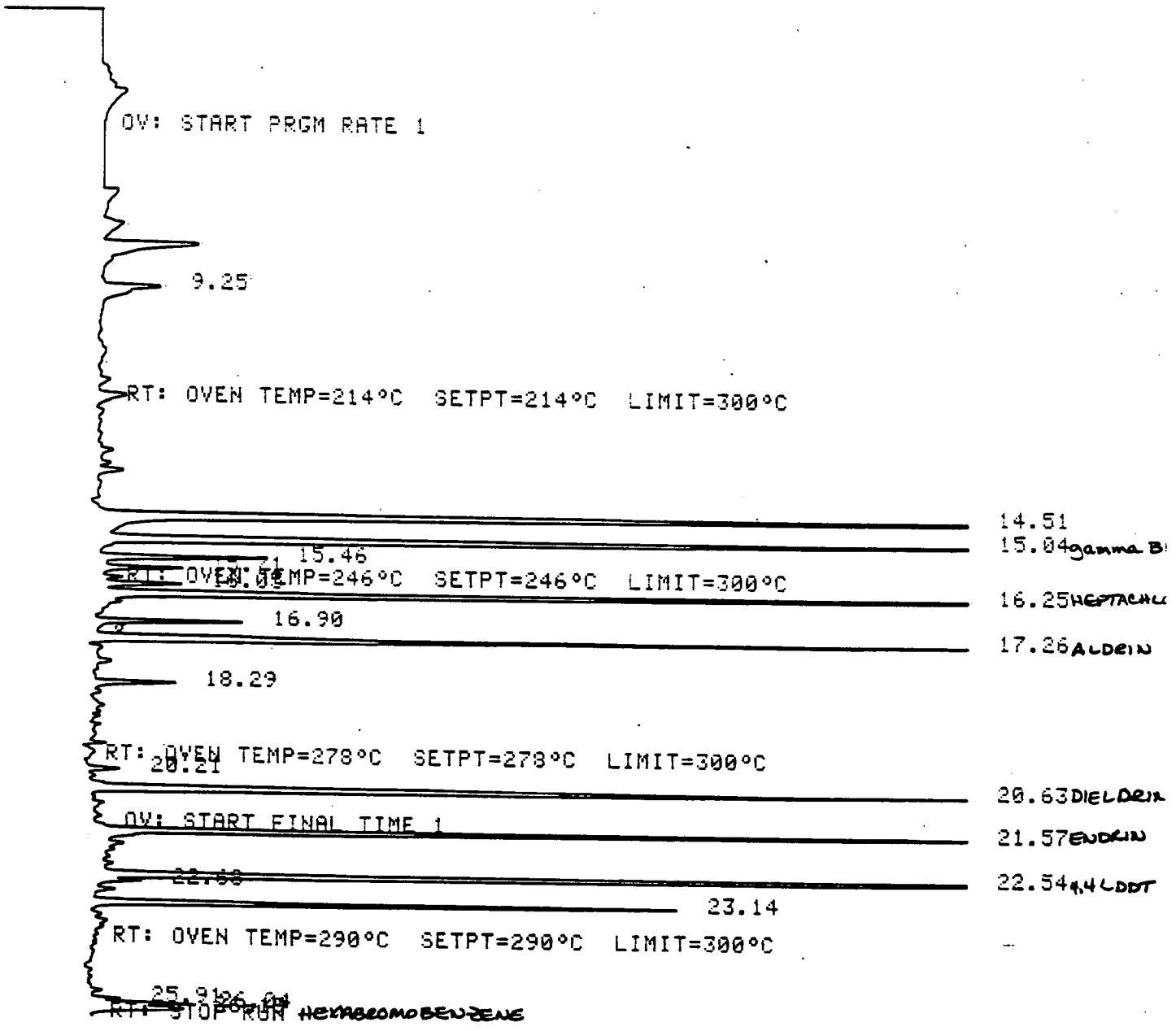
********** EA LABORATORIES **********
---------- PESTICIDE / PCB ANALYSIS ----------

GC #5 / SIGNAL D
COLUMN TYPE - RTX-35 (CAP. - 0.25 UM DF)
COLUMN DIMENSIONS - 30 METERS X 0.25 MM ID
INJECTION TYPE - AUTOMATIC / HP 7673A
INJECTION VOLUME - 3 MICROLITERS
TIME: 2313

SAMPLE ID: DUPLICATE 9SL #1 Matrix Spike Duplicate

OVEN TEMP NOT READY
DET 2 TEMP NOT READY



[hp] 5880A SAMPLER INJECTION @ 23:16 JUN 26, 1989
SAMPLE # : ID CODE :
18 WG 2104 MSD
AREA % COMPENSATED ANALYSIS

5 057

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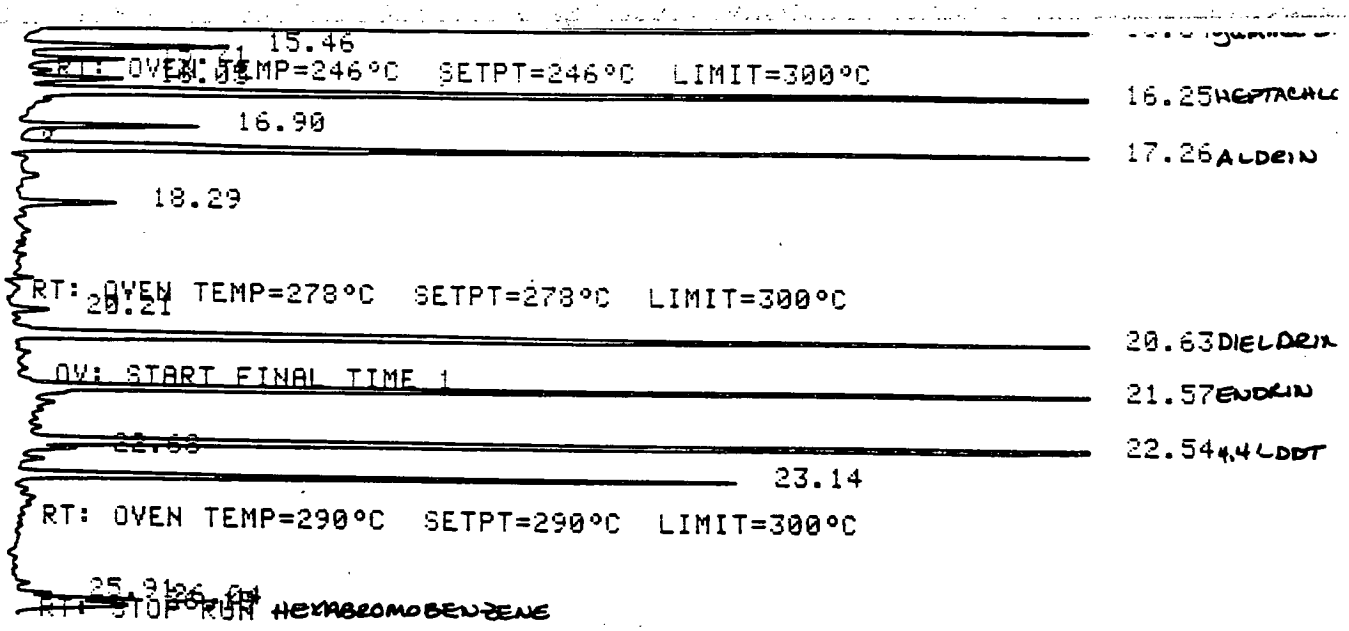

[hp] 5880A SAMPLER INJECTION @ 23:16 JUN 26, 1989
SAMPLE # : ID CODE :
18 WG 2104 MSD
AREA % COMPENSATED ANALYSIS

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RT	AREA	TYPE	WIDTH	HEIGHT	BASELINE	AREA %
0.00			BASELINE @ START RUN = 127.26			
0.00			THRESHOLD @ START RUN = 4			
0.00			PEAK WIDTH @ START RUN = 0.02			
0.00			RT: INTG → OFF			
0.01			RP: EXTEND RT → ON			
6.00			RT: THRESHOLD → 6			
6.00			RT: INTG → ON			
9.254	560.37	BV	-----	59.54	130.11	0.793
14.510	14908.30	PB	0.074	3171.94	132.71	21.086
15.040	9495.70	BB	0.068	2174.61	135.70	13.430
15.464	775.76	BV	0.068	179.32	123.74	1.097
15.706	420.79	VV	0.075	88.19	123.17	0.595
16.055	450.27	VV	0.079	88.90	122.36	0.637
16.250	8480.25	VV	0.064	2065.66	121.91	11.994
16.900	622.05	BV	0.063	155.67	120.74	0.880
17.258	7994.67	BP	0.059	2123.60	118.26	11.307
18.288	381.30	BV	0.070	85.15	118.90	0.539
20.213	141.23	BV	0.067	33.01	112.93	0.200
20.626	7630.64	VB	0.053	2260.14	116.89	10.793
21.569	4291.14	BV	0.059	1133.30	120.30	6.069
22.540	10217.80	VV	0.056	2853.86	120.25	14.452
22.682	217.54	VV	-----	48.93	120.24	0.308
23.137	2379.06	BB	0.059	626.99	120.69	3.365
25.915	131.54	BV	-----	29.95	118.60	0.186
26.037	566.21	VV	-----	104.00	118.46	0.801
26.192	1038.23	VP	-----	98.17	118.26	1.468

TOTAL AREA = 70702.90
MULTIPLIER = 1

Cat. No. 2-2888 (box of 10 pads)
© SUPELCO, INC., Bellefonte, PA Cat. No. 2-2887 (p

E. Quality Assurance Summary

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove Analysis: TCL pesticide/PCBs

EA Laboratories Report No. 890292 Method: U.S. EPA-CLP

Reviewed by: R.S. Bouwkamp Date: 6 July '89

Soils

EA# 2087, 89, 91, 93, 95, 97, 2104, 06, 08, 2104 MS/MSD

1. Samples were extracted within 5 days of sample receipt for waters or 10 days for soils and analyzed within 40 days of extraction.

   ____ Yes ✓ No

2. Initial calibration criteria were met for each analytical sequence: DDT/endrin breakdown <20%; linearity as RSD of the response factors for aldrin, endrin, 4,4'-DDT, and DBC <10%; retention time windows established. for quantitation column.

   ✓ Yes ____ No

3. The 72-hour calibration period was met for all samples.

   ✓ Yes ____ No

4. Continuing calibration criteria were met for all samples: the response factor percent difference from the initial calibration response factor for all compounds of interest was ≤15%.

   ____ Yes ✓ No

5. Surrogate recoveries were within advisory limits for all samples.

   ____ Yes ✓ No

6. Percent recovery and RPD for MS and MSD were within advisory limits for all samples.

   ____ Yes ✓ No

7. Method blank criteria were met for all samples: the method blank must contain ≤CRQL of any single pesticide/PCB target compound.

   ✓ Yes ____ No

8. Laboratory control sample criteria were met for all samples.

   ____ Yes ✓ No

9. All tentatively identified compounds were confirmed on a second column.

   ✓ Yes ____ No

10. Field and equipment blanks: no target compounds were detected in the samples at concentrations <5X the concentration found in the highest associated blank.

    NA ____ Yes ____ No

Comments: 1) All soil samples were extracted within 10 days of sample receipt. Samples EA#2087, 89, 91, 93, 95, 2104, 06, 08, 2104 MS/MSD were analyzed 41 days after extraction.

4) Heptachlor, 4,4'-DDT and Methoxychlor were >15%, no samples were run after standards.

5) Surrogate recoveries were low for 2 out of 11 samples. EA#'s 2097 and 2153 had 20.8% and 21.6% recovery, respectively

6) The RPD's for the MS/MSD were within limits. The matrix spike had high recovery for gamma-BHC and 4,4'-DDT. The matrix spike duplicate had high recovery for gamma-BHC and low recovery for Endrin. (These are advisory limits)

8) Lab spike had high gamma-BHC, Aldrin and 4,4'-DDT recovery.

(Revised 2 June 1989)

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove

Analysis: TCL pesticide/PCBs

EA Laboratories Report No. 890292

Method: U.S. EPA-CLP

Reviewed by: R.S. Bouwkamp

Date: 12 July '89

EA # 2098 - 2099 (RE)

1. Samples were extracted within 5 days of sample receipt for waters or 10 days for soils and analyzed within 40 days of extraction.

____ Yes ✓ No

2. Initial calibration criteria were met for each analytical sequence: DDT/endrin breakdown <20%; linearity as RSD of the response factors for aldrin, endrin, 4,4'-DDT, and DBC <10%; retention time windows established. for quantification column.

____ Yes ✓ No

3. The 72-hour calibration period was met for all samples.

✓ Yes ____ No

4. Continuing calibration criteria were met for all samples: the response factor percent difference from the initial calibration response factor for all compounds of interest was ≤15%.

✓ Yes ____ No

needs to be copied over.

5. Surrogate recoveries were within advisory limits for all samples.

✓ Yes ____ No

6. Percent recovery and RPD for MS and MSD were within advisory limits for all samples.

NA ____ Yes ____ No

7. Method blank criteria were met for all samples: the method blank must contain ≤CRQL of any single pesticide/PCB target compound.

✓ Yes ____ No

8. Laboratory control sample criteria were met for all samples.

NA ____ Yes ____ No

9. All tentatively identified compounds were confirmed on a second column.

NA ____ Yes ____ No

10. Field and equipment blanks: no target compounds were detected in the samples at concentrations <5X the concentration found in the highest associated blank.

NA ____ Yes ____ No

Comments: 1) Original rinsate samples were extracted within holding times. Reextracts of EA# 2098-2099 were reextracted ~49 days from receipt. They were rerun within 40 days of reextraction.

2) % RSD for 4,4'-DDT was 10.53%. 4,4'-DDT breakdown during the run was 28.98%, no samples were analyzed after ~~this~~ that run.

6,8) This data was included with ~~data submitted earlier~~ an earlier data group ~~package~~.

9) There were no positive hits on these samples.

(Revised 2 June 1989) 9 U51

6. INORGANIC DATA

A. Sample Data

U.S. EPA CLP INORGANIC ANALYSIS DATA QUALIFIERS

1. C (concentration) qualifier -- Enter "B" if the reported value is less than the Contract Required Detection Limit (CRDL) but greater that the Instrument Detection Limit (IDL). If the analyte was analyzed for but not detected, a "U" must be entered.

2. Q qualifier -- Specified entries and their meanings are as follows:

   2.1 E -- The reported value is estimated because of the presence of interference.

   2.2 M -- Duplicate injection precision was not met.

   2.3 N -- Spiked sample recovery was not within control limits.

   2.4 S -- The reported value was determined by the Method of Standard Additions (MSA).

   2.5 W -- Post-digestion spike for furnace AA analysis is out of control limits (85-115%), while the sample absorbance is less than 50% of the spike absorbance.

   2.5 * -- Duplicate analyses were not within control limits.

   2.6 + -- Correlation coefficient for MSA is less than 0.995.

3. M (Method) qualifier -- Enter:

   3.1 "P" for ICP

   3.2 "A" for Flame AA

   3.3 "F" for Furnace AA

   3.4 "CV" for Cold Vapor AA

   3.5 "AV" for Automated Cold Vapor AA

   3.6 "AS" for Semi-automated Spectrophotometric

   3.7 "C" for Manual Spectrophotometric

   3.8 "T" for Titrimetric

   3.9 "NR" for an analyte not required to be determined.

(U.S. EPA CLP SOW 12/87)

U.S. EPA - CLP

COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

SOW N .: 7/87

EPA Sample No.	Lab Sample ID.
~~ET1184~~	~~Rinsate Blank~~
~~ET1184D~~	
~~ET1184S~~	
ET2098	Rinsate #1, 9SL, water
ET2099	Rinsate #2, 9SL, water
ET2087	NSLB-1, composite
ET2089	NSLB-2, composite
ET2091	NSLB-3, composite
ET2093	NSLB-4, composite
ET2095	NSLB-5, composite
ET2097	NSLB-6, composite
ET2104	DUP. 9SL #1

Were ICP interelement corrections applied? Yes/No NO

Were ICP background corrections applied? Yes/No YES
If yes-were raw data generated before application of background corrections? Yes/No NO

Comments:

Release of the data contained in this hardcopy data package and in the computer-r adable data submitted on floppy diskette has been authorized by the Laboratory Manag r or the Manager's designee, as verified by the following signature.

Lab Manager: Stephen E. Shelley

Date: 12 JUNE 89

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET2087

me: EA Laboratories

Contract:

de:

Case No.:

SAS No.:

SDG No.: ET1176

(soil/water): SOIL

Lab Sample ID: NSL B-1 Composite

(low/med): LOW

Date Received: 05/03/89

ls: 85.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	12900		E	P
7440-36-0	Antimony	6.3	U	N	P
7440-38-2	Arsenic	2.3		NS	F
7440-39-3	Barium	79.7		N	P
7440-41-7	Beryllium	0.73		N	P
7440-43-9	Cadmium	4.0		N	P
7440-70-2	Calcium	471	B		P
7440-47-3	Chromium	14.2		N	P
7440-48-4	Cobalt	0.62	U	N	P
7440-50-8	Copper	52.0		N	P
7439-89-6	Iron	19600			P
7439-92-1	Lead	11.0		S	F
7439-95-4	Magnesium	1390			P
7439-96-5	Manganese	442			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	9.1		N	P
7440-09-7	Potassium	601			P
7782-49-2	Selenium	0.09	U	N	F
7440-22-4	Silver	0.81	U	N	P
7440-23-5	Sodium	68.0	B		P
7440-28-0	Thallium	32.7	U	N	P
7440-62-2	Vanadium	22.6		N	P
7440-66-6	Zinc	34.5			P
	Cyanide				

re:

Clarity Before:

Texture:

r:

Clarity After:

Artifacts:

COMPOSITE

FORM I - IN

7/87

Rev. IFB Amendment One

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET2089

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Matrix (soil/water): SOIL Lab Sample ID: NSLB-2, Composite

Level (low/med): LOW Date Received: 05/03/89

% Solids: 83.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	17200		E	P
7440-36-0	Antimony	5.8	U	N	P
7440-38-2	Arsenic	2.8		NS	F
7440-39-3	Barium	96.1		N	P
7440-41-7	Beryllium	0.73		N	P
7440-43-9	Cadmium	3.6		N	P
7440-70-2	Calcium	669			P
7440-47-3	Chromium	15.3		N	P
7440-48-4	Cobalt	0.57	U	N	P
7440-50-8	Copper	10.6		N	P
7439-89-6	Iron	19300			P
7439-92-1	Lead	9.2			F
7439-95-4	Magnesium	1320			P
7439-96-5	Manganese	404			P
7439-97-6	Mercury	0.14		N	CV
7440-02-0	Nickel	11.3		N	P
7440-09-7	Potassium	507			P
7782-49-2	Selenium	0.42	U	N	F
7440-22-4	Silver	0.75	U	N	P
7440-23-5	Sodium	79.5	B		P
7440-28-0	Thallium	25.7	U	N	P
7440-62-2	Vanadium	21.0		N	P
7440-66-6	Zinc	29.4			P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
NSLB-2, COMPOSITE

U.S. EPA - CLP

1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET2091

Lab Name: EA Laboratories

Lab Code:

Case No.:

Contract:

SAS No.:

SDG No.: ET1176

Matrix (soil/water): SOIL

Level (low/med): LOW

Lab Sample ID: NSLB-3, Composite

% Solids: 79.8

Date Received: 05/03/89

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13200		E	P
7440-36-0	Antimony	8.6		N	P
7440-38-2	Arsenic	14.9		N	F
7440-39-3	Barium	114		N	P
7440-41-7	Beryllium	0.85		N	P
7440-43-9	Cadmium	5.8		N	P
7440-70-2	Calcium	6570			P
7440-47-3	Chromium	22.1		N	P
7440-48-4	Cobalt	0.66	U	N	P
7440-50-8	Copper	44.4		N	P
7439-89-6	Iron	33300			P
7439-92-1	Lead	477			F
7439-95-4	Magnesium	2600			P
7439-96-5	Manganese	471			P
7439-97-6	Mercury	0.36		N	CV
7440-02-0	Nickel	15.5		N	P
7440-09-7	Potassium	878			P
7782-49-2	Selenium	0.47	U	N	F
7440-22-4	Silver	4.1		N	P
7440-23-5	Sodium	126	B		P
7440-28-0	Thallium	34.7	U	N	P
7440-62-2	Vanadium	26.2		N	P
7440-66-6	Zinc	246			P
	Cyanide				

: Before:

After:

Clarity Before:

Clarity After:

Texture:

Artifacts:

nts:
LB-3, COMPOSITE

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET2093

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Matrix (soil/water): SOIL Lab Sample ID: NSLB-4, Composite

Level (low/med): LOW Date Received: 05/03/89

% Solids: 85.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	10900		E	P
7440-36-0	Antimony	5.2	U	N	P
7440-38-2	Arsenic	7.6	B	N	F
7440-39-3	Barium	70.9		N	P
7440-41-7	Beryllium	0.59		N	P
7440-43-9	Cadmium	2.8		N	P
7440-70-2	Calcium	386	B		P
7440-47-3	Chromium	10.4		N	P
7440-48-4	Cobalt	0.52	U	N	P
7440-50-8	Copper	19.0		N	P
7439-89-6	Iron	15600			P
7439-92-1	Lead	5.2			F
7439-95-4	Magnesium	1220			P
7439-96-5	Manganese	479			P
7439-97-6	Mercury	0.11	U	N	CV
7440-02-0	Nickel	10.3		N	P
7440-09-7	Potassium	870			P
7782-49-2	Selenium	0.08	U	N	F
7440-22-4	Silver	0.67	U	N	P
7440-23-5	Sodium	63.9	B		P
7440-28-0	Thallium	31.0	U	N	P
7440-62-2	Vanadium	16.7		N	P
7440-66-6	Zinc	32.3			P
	Cyanide				

Col r Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

C mments:
NSLB-4, COMPOSITE

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET2095

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Matrix (soil/water): SOIL Lab Sample ID: NSLB-5, Composite

Level (low/med): LOW Date Received: 05/03/89

% Solids: 80.7

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15700			P
7440-36-0	Antimony	5.3	U	N	P
7440-38-2	Arsenic	19.4		N	F
7440-39-3	Barium	63.0		N	P
7440-41-7	Beryllium	0.68		N	P
7440-43-9	Cadmium	4.1		N	P
7440-70-2	Calcium	492			P
7440-47-3	Chromium	14.3		N	P
7440-48-4	Cobalt	0.52	U	N	P
7440-50-8	Copper	11.8		N	P
7439-89-6	Iron	20500			P
7439-92-1	Lead	8.3		S	F
7439-95-4	Magnesium	1720			P
7439-96-5	Manganese	443			P
7439-97-6	Mercury	0.12	U	N	CV
7440-02-0	Nickel	11.0		N	P
7440-09-7	Potassium	515			P
7782-49-2	Selenium	0.47	U	N	F
7440-22-4	Silver	0.68	U	N	P
7440-23-5	Sodium	69.0	B		P
7440-28-0	Thallium	32.3	U	N	P
7440-62-2	Vanadium	24.3		N	P
7440-66-6	Zinc	26.0			P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
NSLB-5, COMPOSITE

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET2097

ne: EA Laboratories

Contract:

ie:

Case No.:

SAS No.:

SDG No.: ET1176

(soil/water): SOIL

Lab Sample ID: NSLB-6 Composite

low/med): LOW

Date Received: 05/03/89

s: 82.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	25400		E	P
7440-36-0	Antimony	6.4	U	N	P
7440-38-2	Arsenic	27.0		N	F
7440-39-3	Barium	105		N	P
7440-41-7	Beryllium	0.88		N	P
7440-43-9	Cadmium	5.4		N	P
7440-70-2	Calcium	486	B		P
7440-47-3	Chromium	12.1		N	P
7440-48-4	Cobalt	0.63	U	N	P
7440-50-8	Copper	26.3		N	P
7439-89-6	Iron	23700			P
7439-92-1	Lead	7.0		S	F
7439-95-4	Magnesium	1060			P
7439-96-5	Manganese	136			P
7439-97-6	Mercury	0.12	U	N	CV
7440-02-0	Nickel	17.1		N	P
7440-09-7	Potassium	684			P
7782-49-2	Selenium	0.43	U	N	F
7440-22-4	Silver	0.82	U	N	P
7440-23-5	Sodium	74.3	B		P
7440-28-0	Thallium	26.7	U	N	P
7440-62-2	Vanadium	23.5		N	P
7440-66-6	Zinc	31.3			P
	Cyanide				

e:

Clarity Before:

Texture:

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Clarity After:

Artifacts:

COMPOSITE

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET2098

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

Matrix (soil/water): WATER Lab Sample ID: Rinsate #1, 9SL, water

Level (low/med): LOW Date Received: 05/03/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	173	B		P
7440-36-0	Antimony	59.1	U		P
7440-38-2	Arsenic	1.9	U		F
7440-39-3	Barium	14.4	U		P
7440-41-7	Beryllium	4.8	B		P
7440-43-9	Cadmium	2.6	U		P
7440-70-2	Calcium	291	B		P
7440-47-3	Chromium	6.8	B		P
7440-48-4	Cobalt	5.8	U		P
7440-50-8	Copper	9.5	B		P
7439-89-6	Iron	22.0	B		P
7439-92-1	Lead	0.50	U		F
7439-95-4	Magnesium	51.0	B		P
7439-96-5	Manganese	1.7	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	9.0	U		P
7440-09-7	Potassium	300	U	N	P
7782-49-2	Selenium	15.0	U	N	F
7440-22-4	Silver	7.6	U	N	P
7440-23-5	Sodium	649	B		P
7440-28-0	Thallium	300	U	N	P
7440-62-2	Vanadium	6.4	U		P
7440-66-6	Zinc	16.9	B		P
	Cyanide				

Color Before: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
RINSATE #1, 9SL, WATER

U.S. EPA - CLP

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET2099

me: EA Laboratories Contract:

de: Case No.: SAS No.: SDG No.: ET1184

(soil/water): WATER Lab Sample ID: Rinsate#2, 9SL, WAT

(1 w/med): LOW Date Received: 05/03/89

ds: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	189	B		P
7440-36-0	Antimony	59.1	U		P
7440-38-2	Arsenic	1.9	U		F
7440-39-3	Barium	14.4	U		P
7440-41-7	Beryllium	4.5	B		P
7440-43-9	Cadmium	2.6	U		P
7440-70-2	Calcium	276	B		P
7440-47-3	Chromium	8.6	B		P
7440-48-4	Cobalt	5.8	U		P
7440-50-8	Copper	7.6	U		P
7439-89-6	Iron	78.0	B		P
7439-92-1	Lead	1.2	B		F
7439-95-4	Magnesium	63.0	B		P
7439-96-5	Manganese	1.7	U		P
7439-97-6	Mercury	0.20	U		CV
7440-02-0	Nickel	20.6	B		P
7440-09-7	Potassium	481	B	N	P
7782-49-2	Selenium	3.0	U	N	F
7440-22-4	Silver	7.6	U	N	P
7440-23-5	Sodium	789	B		P
7440-28-0	Thallium	300	U	N	P
7440-62-2	Vanadium	6.4	U		P
7440-66-6	Zinc	15.5	B		P
	Cyanide				

ore: Clarity Before: Texture:

er: Clarity After: Artifacts:

E #2, 9SL, WATER

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

ET2104

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Matrix (soil/water): SOIL Lab Sample ID: Duplicate, 9SL, #1

Level (low/med): LOW Date Received: 05/03/89

% Solids: 82.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15000		E	P
7440-36-0	Antimony	6.6	U	N	P
7440-38-2	Arsenic	18.9		N	F
7440-39-3	Barium	59.5		N	P
7440-41-7	Beryllium	0.82		N	P
7440-43-9	Cadmium	4.4		N	P
7440-70-2	Calcium	528	B		P
7440-47-3	Chromium	16.6		N	P
7440-48-4	Cobalt	0.65	U	N	P
7440-50-8	Copper	12.9		N	P
7439-89-6	Iron	23900			P
7439-92-1	Lead	10.5		S	F
7439-95-4	Magnesium	1980			P
7439-96-5	Manganese	327			P
7439-97-6	Mercury	0.12	U	N	CV
7440-02-0	Nickel	12.1		N	P
7440-09-7	Potassium	597			P
7782-49-2	Selenium	0.51	U	N	F
7440-22-4	Silver	0.85	U	N	P
7440-23-5	Sodium	82.2	B		P
7440-28-0	Thallium	30.2	U	N	P
7440-62-2	Vanadium	26.3		N	P
7440-66-6	Zinc	29.4			P
	Cyanide				

Color Bef re: Clarity Before: Texture:

Color After: Clarity After: Artifacts:

Comments:
DUPLICATE, 9SL #1

B. Quality Control Data

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0	9431.00	94.3	10000.0	9491.00	94.9	9446.00	94.5	P
Antimony	3000.0	3022.40	100.7	3000.0	2952.50	98.4	3044.00	101.5	P
Arsenic	40.0	40.10	100.2	40.0	39.40	98.5	39.40	98.5	F
Barium	10000.0	10127.00	101.3	10000.0	9844.00	98.4	9694.00	96.9	P
Beryllium	250.0	251.14	100.5	250.0	243.50	97.4	241.72	96.7	P
Cadmium	2500.0	2553.60	102.1	2500.0	2535.40	101.4	2575.80	103.0	P
Calcium	25000.0	24917.00	99.7	25000.0	24995.00	100.0	25525.00	102.1	P
Chromium	1000.0	1026.60	102.7	1000.0	1034.10	103.4	1016.30	101.6	P
Cobalt	2500.0	2533.60	101.3	2500.0	2486.50	99.5	2506.90	100.3	P
Copper	1250.0	1260.40	100.8	1250.0	1236.50	98.9	1248.10	99.8	P
Iron	5000.0	5107.00	102.1	5000.0	5218.00	104.4	5185.00	103.7	P
Lead	50.0	54.30	108.6	50.0	55.00	110.0	54.90	109.8	F
Magnesium	25000.0	25640.00	102.6	25000.0	25756.00	103.0	25794.00	103.2	P
Manganese	2500.0	2514.50	100.6	2500.0	2476.50	99.1	2359.30	94.4	P
Mercury	3.0	2.89	96.3	3.0	2.82	94.0	3.19	106.3	CV
Nickel	2000.0	1983.00	99.2	2000.0	1947.80	97.4	2025.70	101.3	P
Potassium	25000.0	26511.00	106.0	25000.0	25620.00	102.5	23548.00	94.2	P
Selenium	40.0	40.33	100.8	40.0	36.63	91.6	39.05	97.6	F
Silver	250.0	259.43	103.8	250.0	262.85	105.1	249.27	99.7	P
Sodium	25000.0	25005.00	100.0	25000.0	25201.00	100.8	25672.00	102.7	P
Thallium	5000.0	4713.00	94.3	5000.0	4849.00	97.0	5057.00	101.1	P
Vanadium	2500.0	2371.00	94.8	2500.0	2336.00	93.4	2367.40	94.7	P
Zinc	2500.0	2486.50	99.5	2500.0	2441.30	97.7	2521.30	100.9	P
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0	9511.00	95.1			
Antimony	3000.0	3075.80	102.6	3000.0	3003.60	100.1	3038.60	101.3	P
Arsenic	40.0	41.11	102.8	40.0	42.77	106.9	42.00	105.0	P
Barium	10000.0	9666.00	96.7	10000.0	9917.00	99.2	10104.00	101.0	F
Beryllium	250.0			250.0	238.54	95.4	245.42	98.2	P
Cadmium	2500.0			2500.0	2569.30	102.8	2615.50	104.6	P
Calcium	25000.0	23944.00	95.8	25000.0	25177.00	100.7	25197.00	100.8	P
Chromium	1000.0			1000.0	1039.70	104.0	1039.70	104.0	P
Cobalt	2500.0			2500.0	2493.80	99.8	2506.20	100.2	P
Copper	1250.0			1250.0	1211.60	96.9	1220.70	97.7	P
Iron	5000.0			5000.0	5193.00	103.9	5191.00	103.8	P
Lead	50.0	48.00	96.0	50.0	52.10	104.2	52.30	104.6	F
Magnesium	25000.0	24390.00	97.6	25000.0	25745.00	103.0	25823.00	103.3	P
Manganese	2500.0			2500.0	2387.40	95.5	2412.10	96.5	P
Mercury	3.0	2.50	83.3	3.0	2.84	94.7	2.44	81.3	CV
Nickel	2000.0			2000.0	2100.20	105.0	2098.20	104.9	P
Potassium	25000.0			25000.0	23429.00	93.7	23243.00	93.0	P
Selenium	40.0	40.51	101.3	40.0	43.15	107.9	41.33	103.3	F
Silver	250.0			250.0	248.96	99.6	250.52	100.2	P
Sodium	25000.0			25000.0	27279.00	109.1	25537.00	102.1	P
Thallium	5000.0			5000.0	4918.00	98.4	5087.00	101.7	P
Vanadium	2500.0	2360.90	94.4	2500.0	2301.70	92.1	2361.90	94.5	P
Zinc	2500.0	2507.70	100.3	2500.0	2442.90	97.7	2496.70	99.9	P
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0	3070.90	102.4	2914.80	97.2	P
Arsenic	40.0	38.80	97.0	40.0	40.80	102.0	41.25	103.1	F
Barium	10000.0			10000.0	10184.00	101.8	9791.00	97.9	P
Beryllium	250.0			250.0	244.05	97.6			P
Cadmium	2500.0			2500.0	2640.60	105.6	2552.30	102.1	P
Calcium	25000.0			25000.0	25563.00	102.3	24510.00	98.0	P
Chromium	1000.0			1000.0	1066.00	106.6	1021.90	102.2	P
Cobalt	2500.0			2500.0	2555.80	102.2	2460.90	98.4	P
Copper	1250.0			1250.0	1256.50	100.5	1244.90	99.6	P
Iron	5000.0			5000.0					
Lead	50.0	52.60	105.2	50.0	49.60	99.2	54.40	108.8	F
Magnesium	25000.0			25000.0	25952.00	103.8	25018.00	100.1	P
Manganese	2500.0			2500.0					
Mercury	3.0	3.30	110.0	3.0	2.45	81.7	2.64	88.0	CV
Nickel	2000.0			2000.0	2063.40	103.2			P
Potassium	25000.0			25000.0					
Selenium	40.0	39.80	99.5	40.0	40.25	100.6	39.61	99.0	F
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0	2374.60	95.0	2302.00	92.1	P
Zinc	2500.0			2500.0	2493.50	99.7	2396.40	95.9	P
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0	3119.70	104.0	3115.70	103.9	P
Arsenic	40.0	39.56	98.9	40.0	39.70	99.2	39.40	98.5	F
Barium	10000.0			10000.0	10070.00	100.7	10370.00	103.7	P
Beryllium	250.0			250.0					
Cadmium	2500.0			2500.0					
Calcium	25000.0			25000.0	24779.00	99.1	24284.00	97.1	P
Chromium	1000.0			1000.0					
Cobalt	2500.0			2500.0					
Copper	1250.0			1250.0					
Iron	5000.0			5000.0					
Lead	50.0	51.10	102.2	50.0	52.60	105.2	51.60	103.2	F
Magnesium	25000.0			25000.0	25115.00	100.5	25780.00	103.1	P
Manganese	2500.0			2500.0					
Mercury	3.0			3.0					
Nickel	5000.0			5000.0					
Potassium	25000.0			25000.0					
Selenium	40.0			40.0	36.35	90.9	41.10	102.8	F
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0	2403.20	96.1	2353.60	94.1	P
Zinc	2500.0			2500.0	2509.90	100.4	2486.40	99.5	P
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0					
Arsenic	40.0	42.16	105.4	40.0	37.59	94.0	42.28	105.7	F
Barium	10000.0			1000.0					
Beryllium	250.0			250.0					
Cadmium	2500.0			2500.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	2500.0			2500.0					
Copper	1250.0			1250.0					
Iron	5000.0			5000.0					
Lead	50.0	49.80	99.6	50.0	53.60	107.2	53.00	106.0	F
Magnesium	25000.0			25000.0					
Manganese	2500.0			2500.0					
Mercury	3.0			3.0					
Nickel	5000.0			5000.0					
Potassium	25000.0			25000.0					
Selenium	40.0			40.0	37.40	93.5			F
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0					
Zinc	2500.0			2500.0	2420.90	96.8	2453.60	98.1	P
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0					
Arsenic	80.0	86.55	108.2	40.0	42.03	105.1	42.51	106.3	F
Barium	10000.0			1000.0					
Beryllium	250.0			250.0					
Cadmium	2500.0			2500.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	2500.0			2500.0					
Copper	1250.0			1250.0					
Iron	5000.0			5000.0					
Lead	40.0	41.14	102.8	50.0	49.70	99.4	48.50	97.0	F
Magnesium	25000.0			25000.0					
Manganese	2500.0			2500.0					
Mercury	3.0			3.0					
Nickel	5000.0			5000.0					
Potassium	25000.0			25000.0					
Selenium	40.0			40.0					
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0					
Zinc	2500.0			2500.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0					
Arsenic	80.0	84.43	105.5	40.0	42.71	106.8	40.29	100.7	F
Barium	10000.0			1000.0					
Beryllium	250.0			250.0					
Cadmium	2500.0			2500.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	2500.0			2500.0					
Copper	1250.0			1250.0					
Iron	5000.0			5000.0					
Lead	40.0	40.00	100.0	50.0	51.50	103.0	50.90	101.8	F
Magnesium	25000.0			25000.0					
Manganese	2500.0			2500.0					
Mercury	3.0			3.0					
Nickel	5000.0			5000.0					
Potassium	25000.0			25000.0					
Selenium	40.0			40.0					
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0					
Zinc	2500.0			2500.0					
Cyanide	561.0			561.0					

(1) C ntrol Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0			TV=80 µg/L		
Arsenic	40.0			40.0	41.98	105.0	81.90	102.4	F
Barium	10000.0			1000.0					
Beryllium	250.0			250.0					
Cadmium	2500.0			2500.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	2500.0			2500.0					
Copper	1250.0			1250.0					
Iron	5000.0			5000.0					
Lead	40.0	42.24	105.6	50.0	50.00	100.0	50.40	100.8	F
Magnesium	25000.0			25000.0					
Manganese	2500.0			2500.0					
Mercury	3.0			3.0					
Nickel	5000.0			5000.0					
Potassium	25000.0			25000.0					
Selenium	40.0			40.0					
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0					
Zinc	2500.0			2500.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0					
Arsenic	40.0			80.0	84.09	105.1	86.42	108.0	F
Barium	10000.0			1000.0					
Beryllium	250.0			250.0					
Cadmium	2500.0			2500.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	2500.0			2500.0					
Copper	1250.0			1250.0					
Iron	5000.0			5000.0					
Lead	40.0			40.0	41.79	104.5	40.38	101.0	F
Magnesium	25000.0			25000.0					
Manganese	2500.0			2500.0					
Mercury	3.0			3.0					
Nickel	5000.0			5000.0					
Potassium	25000.0			25000.0					
Selenium	40.0			40.0					
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0					
Zinc	2500.0			2500.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0					
Arsenic	80.0			80.0	83.41	104.3	84.19	105.2	F
Barium	10000.0			1000.0					
Beryllium	250.0			250.0					
Cadmium	2500.0			2500.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	2500.0			2500.0					
Copper	1250.0			1250.0					
Iron	5000.0			5000.0					
Lead	40.0			40.0	42.44	106.1	38.14	95.4	F
Magnesium	25000.0			25000.0					
Manganese	2500.0			2500.0					
Mercury	3.0			3.0					
Nickel	5000.0			5000.0					
Potassium	25000.0			25000.0					
Selenium	40.0			40.0					
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0					
Zinc	2500.0			2500.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

EA Laboratories

Contract:

Case No.:

SAS No.:

SDG No.: ET1176

alibration Source:

g Calibration Source:

Concentration Units: ug/L

Initial Calibration			Continuing Calibration					
True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	M
25000.0			25000.0					
3000.0			3000.0					
80.0			80.0	76.15	95.2			
10000.0			1000.0					F
250.0			250.0					
2500.0			2500.0					
25000.0			25000.0					
1000.0			1000.0					
2500.0			2500.0					
1250.0			1250.0					
5000.0			5000.0					
40.0			40.0	39.61	99.0	40.14	100.4	F
25000.0			25000.0					
2500.0			2500.0					
3.0			3.0					
5000.0			5000.0					
25000.0			25000.0					
40.0			40.0					
250.0			250.0					
25000.0			25000.0					
5000.0			5000.0					
2500.0			2500.0					
2500.0			2500.0					
561.0			561.0					

ol Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

FORM II (PART 1) - IN

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U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0					
Arsenic	40.0			40.0					
Barium	10000.0			1000.0					
Beryllium	250.0			250.0					
Cadmium	2500.0			2500.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	2500.0			2500.0					
Copper	1250.0			1250.0					
Iron	5000.0			5000.0					
Lead	40.0			40.0	40.99	102.5	39.74	99.4	F
Magnesium	25000.0			25000.0					
Manganese	2500.0			2500.0					
Mercury	3.0			3.0					
Nickel	5000.0			5000.0					
Potassium	25000.0			25000.0					
Selenium	40.0			40.0					
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0					
Zinc	2500.0			2500.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories

Lab Code: Contract:

Case No.: SAS No.: SDG No.: ET1184

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0	10158.00	101.6	10000.0	10500.00	105.0	9882.00	98.8	
Antimony	3000.0	3022.40	100.7	3000.0	3038.60	101.3	3070.90	102.4	P
Arsenic	40.0	39.40	98.5	40.0	40.55	101.4	40.49	101.2	P
Barium	10000.0	10127.00	101.3	10000.0	10104.00	101.0	10184.00	101.8	F
Beryllium	250.0	251.14	100.5	250.0	238.54	95.4	245.42	98.2	P
Cadmium	2500.0	2418.50	96.7	2500.0	2517.70	100.7	2407.90	96.3	P
Calcium	25000.0	24917.00	99.7	25000.0	25197.00	100.8	25563.00	102.3	P
Chromium	1000.0	1057.40	105.7	1000.0	1049.20	104.9	1006.00	100.6	P
Cobalt	2500.0	2524.90	101.0	2500.0	2509.60	100.4	2542.10	101.7	P
Copper	1250.0	1254.40	100.4	1250.0	1233.90	98.7	1251.10	100.1	P
Iron	5000.0	5093.00	101.9	5000.0	4948.00	99.0	5064.00	101.3	P
Lead	50.0	48.00	96.0	50.0	54.40	108.8	52.60	105.2	F
Magnesium	25000.0	25640.00	102.6	25000.0	25823.00	103.3	25952.00	103.8	P
Manganese	2500.0	2420.50	96.8	2500.0	2490.40	99.6	2339.30	93.6	P
Mercury	3.0	3.13	104.3	3.0	3.20	106.7	2.67	89.0	CV
Nickel	2500.0	2434.80	97.4	2500.0	2531.70	101.3	2389.30	95.6	P
Potassium	25000.0	26511.00	106.0	25000.0	23429.00	93.7	22674.00	90.7	P
Selenium	40.0	41.20	103.0	40.0	39.70	99.2	41.40	103.5	F
Silver	250.0	255.75	102.3	250.0	248.58	99.4	244.09	97.6	P
Sodium	25000.0	25839.00	103.4	25000.0	27279.00	109.1	25537.00	102.1	P
Thallium	5000.0	4698.00	94.0	5000.0	4709.00	94.2	4613.00	92.3	P
Vanadium	2500.0	2371.00	94.8	2500.0	2361.90	94.5	2374.60	95.0	P
Zinc	2500.0	2507.70	100.3	2500.0	2486.40	99.5	2420.90	96.8	P
Cyanide	0.0			0.0					

Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	10000.0			10000.0	10444.00	104.4			
Antimony	3000.0			3000.0	2914.80	97.2			P
Arsenic	80.0	80.57	100.7	40.0	41.13	102.8	TV=80.0 ↑ 77.74	97.2	P
Barium	10000.0			10000.0	9791.00	97.9			F
Beryllium	250.0			250.0	244.05	97.6			P
Cadmium	2500.0			2500.0	2501.80	100.1			P
Calcium	25000.0			25000.0	24510.00	98.0			P
Chromium	1000.0			1000.0	1013.60	101.4			P
Cobalt	2500.0			2500.0	2421.40	96.9			P
Copper	1250.0			1250.0	1179.40	94.4			P
Iron	5000.0			5000.0	4840.00	96.8	TV=40.0 ↑		P
Lead	40.0	41.14	102.8	50.0	51.60	103.2	41.79	104.5	P
Magnesium	25000.0			25000.0	25018.00	100.1			F
Manganese	2500.0			2500.0	2549.40	102.0			P
Mercury	3.0	2.89	96.3	3.0	2.88	96.0	2.82	94.0	P
Nickel	2500.0			2500.0	2551.10	102.0			CV
Potassium	25000.0			25000.0					P
Selenium	40.0	40.02	100.0	40.0	42.65	106.6	40.76	101.9	
Silver	250.0			250.0	245.79	98.3			F
Sodium	25000.0			25000.0					P
Thallium	5000.0			5000.0	4577.00	91.5			
Vanadium	2500.0			2500.0	2302.00	92.1			P
Zinc	2500.0			2500.0	2453.60	98.1			P
Cyanide	561.0			561.0					P

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

2A

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

Initial Calibration Source:

Continuing Calibration Source:

Concentration Units: ug/L

Analyte	Initial Calibration True	Initial Calibration Found	Initial Calibration %R(1)	Continuing Calibration True	Continuing Calibration Found	Continuing Calibration %R(1)	Continuing Calibration Found	Continuing Calibration %R(1)	M
Aluminum	25000.0			25000.0					
Antimony	3000.0			3000.0					
Arsenic	80.0			80.0	72.43	90.5			F
Barium	10000.0			1000.0					
Beryllium	250.0			250.0					
Cadmium	2500.0			2500.0					
Calcium	25000.0			25000.0					
Chromium	1000.0			1000.0					
Cobalt	2500.0			2500.0					
Copper	1250.0			1250.0					
Iron	5000.0			5000.0					
Lead	40.0			40.0	40.38	101.0			F
Magnesium	25000.0			25000.0					
Manganese	2500.0			2500.0					
Mercury	3.0			3.0					
Nickel	5000.0			5000.0					
Potassium	25000.0			25000.0					
Selenium	40.0			40.0					
Silver	250.0			250.0					
Sodium	25000.0			25000.0					
Thallium	5000.0			5000.0					
Vanadium	2500.0			2500.0					
Zinc	2500.0			2500.0					
Cyanide	561.0			561.0					

(1) Control Limits: Mercury 80-120; Other Metals 90-110; Cyanide 85-115

U.S. EPA - CLP

3
BLANKS

Name: EA Laboratories Contract:

Code: Case No.: SAS No.: SDG No.: ET1176

aration Blank Matrix (soil/water): WATER

aration Blank Concentration Units (ug/L or mg/kg): UG/L

nalyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
luminum	179.0	B	199.0	B	198.0	B	192.0	B	21.1		P
ntimony	59.1	U	59.1	U	59.1	U	59.1	U	5.9	U	P
rsenic	1.9	U	1.9	U	1.9	U	1.9	U	0.2	U	F
arium	14.4	U	14.4	U	14.4	U	14.4	U	1.4	U	P
eryllium	4.8	B	4.7	B	4.5	B	4.4	B	0.4	B	P
admium	2.6	U	2.6	U	2.6	U	2.6	U	0.3	U	P
alcium	1020.0	B	20.2	U	24.0	B	44.0	B	10.1	B	P
hromium	12.0	U	12.0	U	12.0	U	12.0	U	1.2	U	P
obalt	5.8	U	5.8	U	5.8	U	5.8	U	0.6	U	P
opper	7.6	U	7.6	U	7.6	U	7.6	U	0.8	U	P
ron	37.6	U	37.6	U	37.6	U	37.6	U	5.5	B	P
ead	1.0	U	1.0	U	1.0	U	1.0	U	0.1	B	F
agnesium	36.0	B	9.0	U	9.0	U	9.0	U	2.3	B	P
anganese	1.7	U	1.7	U	1.7	U	1.7	U	0.3	B	P
ercury	0.2	U	0.2	U	0.2	U	0.2	U	0.1	U	CV
ickel	9.3	B	9.0	U	9.0	U	15.7	B	1.5	B	P
otassium	300.0	U	300.0	U	300.0	U	300.0	U	30.0	U	P
elenium	1.6	B	1.0	U	1.0	U	1.0	U	0.1	U	F
ilver	7.6	U	7.6	U	7.6	U	7.6	U	0.8	U	P
odium	383.0	B	367.0	B	588.0	B	348.0	B	40.7	B	P
hallium	300.0	U	300.0	U	300.0	U	300.0	U	30.0	U	P
anadium	6.4	U	6.4	U	6.4	U	6.4	U	0.6	U	P
inc	14.4	B	3.4	U	3.4	U	3.4	U	3.5		P
yanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony	59.1	U	59.1	U	59.1	U	59.1	U			P
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U			F
Barium	14.4	U	14.4	U	14.4	U	14.4	U			P
Beryllium			4.8	B	4.5	B					P
Cadmium			2.6	U	3.0	B	2.6	U			P
Calcium	20.2	U	45.0	B	45.0	B	41.0	B			P
Chromium			9.1	B	5.2	U	10.0				P
Cobalt			5.8	U	5.8	U	5.8	U			P
Copper			7.6	U	7.6	U	7.6	U			P
Iron			37.6	U							P
Lead	1.0	U	1.0	B	1.0	U	1.0	U			F
Magnesium	9.0	U	9.0	U	9.0	U	9.0	U			P
Manganese			2.7	B							P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U			CV
Nickel			10.8	B	9.0	U					P
Potassium			300.0	U							P
Selenium	1.0	U	1.0	U	1.0	U	1.0	U			F
Silver			7.6	U							P
Sodium			379.0	B							P
Thallium			300.0	U							P
Vanadium	6.4	U	6.4	U	6.4	U	6.4	U			P
Zinc	3.4	U	3.4	U	3.4	U	3.4	U	1.3	B	P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony			59.1	U	59.1	U					P
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U			F
Barium			14.4	U	14.4	U					P
Beryllium											
Cadmium											
Calcium			20.2	U	20.2	U					P
Chromium											
Cobalt											
Copper											
Iron											
Lead	1.0	U	1.0	B	1.6	B	1.0	U			F
Magnesium			32.0	B	9.0	U					P
Manganese											
Mercury	0.2	U									CV
Nickel											
Potassium											
Selenium	1.0	U	1.0	U	1.0	U	1.0	U			F
Silver											
Sodium											
Thallium											
Vanadium			6.4	U	7.2	B					P
Zinc			3.4	U	-3.5	B	3.4	U			P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	1.0	U	1.0	U	1.0	U	1.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc			3.4	U							P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	1.0	U	1.0	U	1.0	U	1.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: ET1176

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U			
Barium											
Beryllium											F
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	-1.7	B	1.0	U	-3.4	B	-3.9	B			
Magnesium											
Manganese											F
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

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3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U			F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	1.0	U	-2.2	B	-3.4	B	1.0	U			F
Magnesium											
Manganese											
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: ET1176

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic											
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead											
Magnesium	1.0	U	-1.0	B	1.0	U	-1.9	B			
Manganese											F
Mercury											
Nickel											
Potassium											
Selenium											
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum	145.0	B	174.0	B	152.0	B	162.5	B	138.0	B	P
Antimony	59.1	U	59.1	U	59.1	U	59.1	U	59.1	U	P
Arsenic	1.9	U	1.9	U	1.9	U	1.9	U	1.9	U	F
Barium	14.4	U	14.4	U	14.4	U	14.4	U	14.4	U	P
Beryllium	4.8	B	4.4	B	4.8	B	4.5	B	5.0		P
Cadmium	2.6	U	3.5	B	3.5	B	2.6	U	3.5	B	P
Calcium	1020.0	B	45.0	B	45.0	B	41.0	B	99.0	B	P
Chromium	8.0	B	5.2	U	5.2	U	5.2	U	8.6	B	P
Cobalt	5.8	U	5.8	U	5.8	U	5.8	U	5.8	U	P
Copper	7.6	U	7.6	U	7.6	U	7.6	U	7.6	U	P
Iron	6.0	U	6.0	B	7.0	B	8.0	B	14.0	B	P
Lead	0.5	U	0.8	B	1.0	B	1.6	B	1.7	B	F
Magnesium	36.0	B	9.0	U	9.0	U	9.0	U	9.0	U	P
Manganese	1.7	U	1.7	U	1.7	U	8.0	B	1.7	U	P
Mercury	0.2	U	0.2	U	0.2	U	0.2	U	0.2	U	CV
Nickel	18.8	B	9.0	U	13.9	B	16.5	B	18.8	B	P
Potassium	300.0	U	300.0	U	300.0	U			300.0	U	P
Selenium	3.0	U	3.0	U	3.0	U	3.0	U	3.0	U	F
Silver	7.6	U	7.6	U	7.6	U	7.6	U	7.6	U	P
Sodium	258.0	B	348.0	B	379.0	B			493.0	B	P
Thallium	300.0	U	300.0	U	300.0	U	300.0	U	300.0	U	P
Vanadium	6.4	U	6.4	U	6.4	U	6.4	U	6.4	U	P
Zinc	3.4	U	-3.5	B	3.4	U	3.4	U	7.1	B	P
Cyanide											

U.S. EPA - CLP

3
BLANKS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

Preparation Blank Matrix (soil/water): WATER

Preparation Blank Concentration Units (ug/L or mg/kg): UG/L

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Aluminum											
Antimony											
Arsenic	1.9	U	1.9	U	1.9	U					F
Barium											
Beryllium											
Cadmium											
Calcium											
Chromium											
Cobalt											
Copper											
Iron											
Lead	-1.7	B	-3.4	B	-3.9	B					F
Magnesium											
Manganese											
Mercury	0.2	U	0.2	U							CV
Nickel											
Potassium											
Selenium	3.0	U	3.0	U							F
Silver											
Sodium											
Thallium											
Vanadium											
Zinc											
Cyanide											

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

ne: EA Laboratories

Contract:

ie:

Case No.:

SAS No.:

SDG No.: ET1176

Number:

ICS Source:

Concentration Units: ug/L

te	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
num	500000	500000						
ony								
ic								
n	0	500	9	480.0	96.0	38	474.0	94.8
lium	0	500	5	453.6	90.7	5	459.7	91.9
ım	0	1000	112	1032.1	103.2	117	1054.9	105.5
ım	500000	500000						
ıum	0	500	12	464.8	93.0	7	469.5	93.9
	0	1000	-46	889.6	89.0	12	950.4	95.0
	0	500	6	474.9	95.0	-6	469.6	93.9
	200000	200000						
	0	1000						
ium	500000	500000						
ese	0	500	55	513.3	102.7	56	488.9	97.8
y								
	0	1000	3	914.3	91.4	10	925.1	92.5
ium								
um								
	0	1000	4	1016.4	101.6	6	929.5	93.0
ım								
ım	0	500	22	445.8	89.2	-31	423.9	84.8
	0	1000	58	965.3	96.5	32	931.8	93.2

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4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: ET1176

ICP ID Number:

ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000						
Antimony								
Arsenic								
Barium	0	500	6	477.0	95.4	12	508.0	101.6
Beryllium	0	500						
Cadmium	0	1000						
Calcium	500000	500000						
Chromium	0	500						
Cobalt	0	500						
Copper	0	500						
Iron	200000	200000						
Lead	0	1000						
Magnesium	500000	500000						
Manganese	0	500						
Mercury								
Nickel	0	1000						
Potassium								
Selenium								
Silver								
Sodium								
Thallium								
Vanadium	0	500	36	491.5	98.3	35	478.7	95.7
Zinc	0	1000	39	1167.5	116.8	40	1134.2	113.4

U.S. EPA - CLP

4

ICP INTERFERENCE CHECK SAMPLE

Lab Name: EA Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: ET1184

ICP ID Number:

ICS Source:

Concentration Units: ug/L

Analyte	True Sol. A	True Sol. AB	Initial Found Sol. A	Initial Found Sol. AB	Initial Found %R	Final Found Sol. A	Final Found Sol. AB	Final Found %R
Aluminum	500000	500000						
Antimony								
Arsenic								
Barium	0	500	9	480.0	96.0	38	474.0	94.8
Beryllium	0	500	5	453.6	90.7	5	459.7	91.9
Cadmium	0	1000	43	903.4	90.3	44	879.9	88.0
Calcium	500000	500000						
Chromium	0	500	11	477.0	95.4	9		
Cobalt	0	1000	-141	805.4	80.5	-71	900.5	90.0
Copper	0	500	6	460.9	92.2	3	445.3	89.1
Iron	200000	200000						
Lead	0	1000						
Magnesium	500000	500000						
Manganese	0	500	49	515.3	103.1	52	494.7	98.9
Mercury								
Nickel	0	1000	5	902.9	90.3	13	901.1	90.1
Potassium								
Selenium								
Silver	0	1000	2	944.0	94.4	2	929.8	93.0
Sodium								
Thallium								
Vanadium	0	500	22	445.8	89.2	-31	423.9	84.8
Zinc	0	1000	39	1167.5	116.8	40	1134.2	113.4

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET2104S

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum		12004.2700		15025.5800		214.6	-1407.9		P
Antimony	75-125	6.3406	U	6.6453	U	53.6	0.0	N	P
Arsenic	75-125	22.2940		18.9124		5.4	62.6	N	F
Barium	75-125	60.4022		59.4816		214.6	0.4	N	P
Beryllium	75-125	0.7435		0.8219		5.4	-1.5	N	P
Cadmium	75-125	3.5404		4.4414		5.4	-16.7	N	P
Calcium									NR
Chromium	75-125	15.4600		16.6301		21.5	-5.4	N	P
Cobalt	75-125	0.6223	U	0.6522	U	53.6	0.0	N	P
Copper	75-125	10.0098		12.8633		26.8	-10.6	N	P
Iron									NR
Lead		11.1741		10.5100		2.2	30.2		F
Magnesium									NR
Manganese		296.9150		327.0478		53.6	-56.2		P
Mercury	75-125	2.1576		0.1192	U	1.5	143.8	N	CV
Nickel	75-125	9.2481		12.0650		53.6	-5.3	N	P
Potassium									NR
Selenium	75-125	0.1562	B	0.5145	U	1.1	14.2	N	F
Silver	75-125	0.8154	U	0.8546	U	5.4	0.0	N	P
Sodium									NR
Thallium	75-125	29.1212	U	30.1648	U	194.1	0.0	N	P
Vanadium	75-125	24.7831		26.3114		53.6	-2.9	N	P
Zinc	75-125	90.9519		29.3634		53.5	115.1		P
Cyanide									NR

Comments:

U.S. EPA - CLP

5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET2104A

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Matrix (soil/water): SOIL Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									NR
Antimony		190.20		74.50		200.0	57.8		NR
Arsenic									NR
Barium		1588.00		541.00		1000.0	104.7		P
Beryllium		30.10		7.31		20.0	114.0		P
Cadmium		72.10		39.50		50.0	65.2		P
Calcium									NR
Chromium		326.00		147.90		200.0	89.0		P
Cobalt		5.80	U	5.80	U	100.0	0.0		P
Copper		291.60		114.40		200.0	88.6		P
Iron									NR
Lead									NR
Magnesium									NR
Manganese		7688.60		2908.60		5000.0	95.6		P
Mercury									NR
Nickel		287.10		107.30		200.0	89.9		P
Potassium									NR
Selenium									NR
Silver		25.50		7.36		20.0	90.7		NR
Sodium									NR
Thallium		431.00		43.00		500.0	77.6		NR
Vanadium		804.40		248.70		500.0	105.7		NR
Zinc									NR
Cyanide									NR

Comments:

U.S. EPA - CLP

5A
SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET1184S

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum	75-125	1972.0000		182.0000	B	2000.0	89.5		P
Antimony	75-125	578.6000		59.1000	U	500.0	115.7		P
Arsenic	75-125	39.3400		1.9000	U	50.0	78.7		F
Barium	75-125	2021.0000		14.4000	U	2000.0	101.0		P
Beryllium	75-125	46.7700		4.6000	B	50.0	84.3		P
Cadmium	75-125	44.4000		2.6000	U	50.0	88.8		P
Calcium									NR
Chromium	75-125	193.7000		8.3000	B	200.0	92.7		P
Cobalt	75-125	45.1000	B	5.8000	U	50.0	90.2		P
Copper	75-125	247.8000		7.6000	U	250.0	99.1		P
Iron	75-125	1054.0000		34.0000	B	1000.0	102.0		P
Lead	75-125	23.8000		2.1000	B	20.0	108.5		F
Magnesium									NR
Manganese	75-125	471.0000		1.7000	U	500.0	94.2		P
Mercury									NR
Nickel	75-125	489.0000		15.8000	B	500.0	94.6		P
Potassium	75-125	300.0000	U	300.0000	U	500.0	0.0	N	P
Selenium	75-125	3.0000	U	3.0000	U	10.0	0.0	N	F
Silver	75-125	26.5400		7.6000	U	50.0	53.1	N	P
Sodium									NR
Thallium	75-125	300.0000	U	300.0000	U	2000.0	0.0	N	P
Vanadium	75-125	478.9000		6.4000	U	500.0	95.8		P
Zinc	75-125	505.4000		9.4000	B	500.0	99.2		P
Cyanide									NR

Comm nts:

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5B
POST DIGEST SPIKE SAMPLE RECOVERY

EPA SAMPLE NO.

ET1184A

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

Matrix (soil/water): WATER Level (low/med): LOW

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Aluminum									
Antimony									NR
Arsenic									NR
Barium									NR
Beryllium									NR
Cadmium									NR
Calcium									NR
Chromium									NR
Cobalt									NR
Copper									NR
Iron									NR
Lead									NR
Magnesium									NR
Manganese									NR
Mercury									NR
Nickel									NR
Potassium		9633.00		300.00	U	10000.0	96.3		P
Selenium									NR
Silver		75.27		7.60	U	100.0	75.3		P
Sodium									NR
Thallium		300.00	U	300.00	U	200.0	0.0		P
Vanadium									NR
Zinc									NR
Cyanide									NR

Comments:

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

ET2104D

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1176

Matrix (soil/water): SOIL Level (low/med): LOW

% Solids for Sample: 82.5 % Solids for Duplicate: 82.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum		15025.5800		17763.4180		16.7		P
Antimony	6.7	6.6453	U	5.6327	U			P
Arsenic	10.3	18.9124		16.3332		14.6		F
Barium	22.5	59.4816		62.7124		5.3		P
Beryllium	0.6	0.8219		0.7558		8.4		P
Cadmium		4.4414		4.3841		1.3		P
Calcium	562.2	528.0261	B	466.0538	B	12.5		P
Chromium		16.6301		16.9552		1.9		P
Cobalt	5.6	0.6522	U	0.5528	U			P
Copper	2.8	12.8633		13.8958		7.7		P
Iron		23884.8590		21581.4370		10.1		P
Lead	2.6	10.5100		12.6044		18.1		F
Magnesium	562.2	1978.7485		1886.4220		4.8		P
Manganese		327.0478		324.6079		0.7		P
Mercury	0.1	0.1192	U	0.1199	U			CV
Nickel	4.5	12.0650		11.8181		2.1		P
Potassium	392.3	597.3897		644.9950		7.7		P
Selenium	2.6	0.5145	U	0.1050	U			F
Silver	1.1	0.8546	U	0.7243	U			P
Sodium	562.2	82.1949	B	78.4381	B	4.7		P
Thallium	1.0	30.1648	U	30.4349	U			P
Vanadium	5.6	26.3114		24.4083		7.5		P
Zinc		29.3634		33.3191		12.6		P
Cyanide								

U.S. EPA - CLP

6
DUPLICATES

EPA SAMPLE NO.

ET1184D

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

Matrix (soil/water): WATER Level (low/med): LOW

% Solids for Sample: 0.0 % Solids for Duplicate: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Aluminum	200.0	182.0000	B	181.0000	B	0.6		P
Antimony	60.0	59.1000	U	59.1000	U			P
Arsenic	10.0	1.9000	U	1.9000	U			F
Barium	200.0	14.4000	U	14.4000	U			P
Beryllium	5.0	4.6000	B	4.6600	B	1.3		P
Cadmium	5.0	2.6000	U	3.5000	B	200.0		P
Calcium	5000.0	366.0000	B	246.0000	B	39.2		P
Chromium	10.0	8.3000	B	7.4000	B	11.5		P
Cobalt	50.0	5.8000	U	5.8000	U			P
Copper	25.0	7.6000	U	7.6000	U			P
Iron	100.0	34.0000	B	16.0000	B	72.0		P
Lead	5.0	2.1000	B	2.1000	B	0.0		F
Magnesium	5000.0	49.0000	B	19.0000	B	88.2		P
Manganese	15.0	1.7000	U	1.7000	U			P
Mercury								CV
Nickel	40.0	15.8000	B	9.1000	B	53.8		P
Potassium	5000.0	300.0000	U	300.0000	U			P
Selenium	5.0	3.0000	U	3.0000	U			F
Silver	10.0	7.6000	U	7.6000	U			P
Sodium	5000.0	800.0000	B	684.0000	B	15.6		P
Thallium		300.0000	U	300.0000	U			P
Vanadium	50.0	6.4000	U	6.4000	U			P
Zinc	20.0	9.4000	B	9.9000	B	5.2		P
Cyanide								

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STANDARD ADDITION RESULTS

Lab Name: EA Laboratories

Contract:

Lab Code:

Case No.:

SAS No.:

SDG No.: ET1176

Concentration Units: ug/L

EPA Sample No.	An	Dil	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q
ET1181	AS	1	0.144	10	0.190	20	0.226	30	0.264	37.0	0.9985	
ET1183	AS	1	0.144	10	0.183	20	0.215	30	0.251	41.2	0.9993	
ET2087	AS	1	0.082	10	0.125	20	0.153	30	0.186	25.1	0.9961	
ET2089	AS	1	0.137	10	0.186	20	0.226	30	0.262	33.9	0.9975	
ET1176	PB	5	0.245	10	0.297	20	0.347	30	0.392	251.1	0.9995	
ET1177	PB	10	0.752	10	0.918	20	1.070	30	1.225	481.0	0.9998	
ET1178	PB	10	0.286	10	0.490	20	0.690	30	0.879	146.2	0.9999	
ET1180	PB	10	0.075	10	0.102	20	0.129	30	0.157	274.0	1.0000	
ET1182	PB	10	0.172	10	0.220	20	0.267	30	0.305	390.4	0.9986	
ET1183	PB	5	0.116	10	0.178	20	0.232	30	0.287	104.2	0.9995	
ET2087	PB	5	0.119	10	0.180	20	0.233	30	0.275	118.6	0.9967	
ET2095	PB	5	0.100	10	0.158	20	0.215	30	0.272	87.5	1.0000	
ET2097	PB	5	0.092	10	0.151	20	0.203	30	0.262	82.5	0.9997	
ET2104	PB	5	0.108	10	0.166	20	0.217	30	0.270	102.1	0.9996	

U.S. EPA - CLP

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STANDARD ADDITION RESULTS

Lab Name: EA Laboratories Contract:

Lab Code: Case No.: SAS No.: SDG No.: ET1184

Concentration Units: ug/L

EPA Sample No.	An	Dil	0 ADD ABS	1 ADD CON	1 ADD ABS	2 ADD CON	2 ADD ABS	3 ADD CON	3 ADD ABS	Final Conc.	r	Q

U.S. EPA - CLP

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HOLDING TIMES

Laboratories Contract:

Case No.: SAS No.: SDG No.: ET1176

No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanide Holding Time
5	~~SOIL~~	~~03/30/89~~	~~04/09/89~~	~~10~~		
7	~~SOIL~~	~~03/30/89~~	~~04/09/89~~	~~10~~		
3	~~SOIL~~	~~03/30/89~~	~~04/09/89~~	~~10~~		
9	~~SOIL~~	~~03/30/89~~	~~04/09/89~~	~~10~~		
0	~~SOIL~~	~~03/30/89~~	~~04/09/89~~	~~10~~		
1	~~SOIL~~	~~03/30/89~~	~~04/09/89~~	~~10~~		
2	~~SOIL~~	~~03/30/89~~	~~04/09/89~~	~~10~~		
3	~~SOIL~~	~~03/30/89~~	~~04/09/89~~	~~10~~		
7	SOIL	05/03/89	05/24/89	21		
9	SOIL	05/03/89	05/24/89	21		
1	SOIL	05/03/89	05/24/89	21		
3	SOIL	05/03/89	05/24/89	21		
5	SOIL	05/03/89	05/24/89	21		
7	SOIL	05/03/89	05/24/89	21		
4	SOIL	05/03/89	05/24/89	21		
4D	SOIL	05/03/89	05/24/89	21		
4S	SOIL	05/03/89	05/24/89	21		

U.S. EPA - CLP

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HOLDING TIMES

Lab Name: EA Laboratories

Lab Code:

Case No.:

Contract:

SAS No.:

SDG No.: ET1184

EPA Sample No.	Matrix	Date Received	Mercury Prep Date	Mercury Holding Time	Cyanide Prep Date	Cyanide Holding Time
~~ET1184~~	~~WATER~~	~~03/30/89~~	~~04/09/89~~	~~10~~		
~~ET1184D~~	~~WATER~~					
~~ET1184S~~	~~WATER~~					
ET2098	WATER	05/03/89	05/22/89	19		
ET2099	WATER	05/03/89	05/22/89	19		

FORM X - IN

7/87

C. Qualtiy Assurance Summary

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove

Analysis: TCL metals

EA Laboratories Report No. _____

Method: U.S. EPA-CLP

Reviewed by: Stephen E. Shelley

Date: 12 June 89

1. Samples were analyzed within six months of sample collection. Mercury was analyzed within 26 days.

   ✓ Yes _____ No

2. ICP initial calibration: A calibration blank and at least one standard were analyzed daily, and the initial calibration verification standard was within 90% to 110% recovery.

   ✓ Yes _____ No

3. AA calibration: A calibration blank and at least three standards were used to establish the curve.

   ✓ Yes _____ No

4. Calibration verification (CV): A CV standard prepared from a source other than that of the initial calibration was used, and the result was within 90 to 110% of the true value for both ICP and AA work. A CV was run at a frequency of 10%, or every two hours, and at the end of the run.

   ✓ Yes _____ No

5. A preparation blank was run with each batch, and all analytes were below the detection limits.

   ✓ Yes _____ No

6. Matrix spike and duplicate criteria were met for all samples.

   ✓ Yes _____ No

7. Laboratory control sample criteria were met for all samples.

   ✓ Yes _____ No

(Revised 31 May 1989)

EA LABORATORIES

QUALITY ASSURANCE SUMMARY

FOR NAVAL ENERGY AND ENVIRONMENTAL SUPPORT ACTIVITY CONTRACTS

Project: Willow Grove

Analysis: TCL metals

EA Laboratories Report No. _____

Method: U.S. EPA-CLP

Reviewed by: Stephen E Shillay

Date: 12 June 89

8. Field and equipment blanks: no target analytes were detected in the samples at concentrations <5X the concentration found in the highest associated blank.

✓ Yes _____ No

Comments: _____

(Revised 31 May 1989)

7. MISCELLANEOUS WET CHEMISTRY DATA

A. Analytical Results

RESULTS OF ANALYSIS OF 13 SOIL SAMPLES COLLECTED AT WILLOW GROVE BETWEEN 1 AND 3 MAY 1989

Sample	Cyanide total (mg/kg, dry)	Total Petroleum Hydrocarbons (mg/kg, dry)	Total Organic Carbon (mg/kg, dry)	EA Number
NSLB-1, Composite	0.12	58.6	2,300	2087
NSLB-2, Composite	0.24	35.8	1,900	2089
NSLB-3, Composite	0.13	627	7,300	2091
NSLB-4, Composite	0.12	46.9	890	2093
NSLB-5, Composite	<0.12	37.2	2,200	2095
NSLB-6, Composite	<0.12	36.4	920	2097
Duplicate 9SL #1	<0.12	36.4	1,200	2104
FTAB-1, S-2	--	830	11,000	2105
FTAB-2, S-3	--	24	1,600	2107
FTAB-3, S-1	--	22	660	2150
FTAB-4, S-2	--	22	320	2152
BLD 330 B-1, Composite	--	530	950	2155
BLD 330 B-2, Composite	--	24	670	2157

Dash (--) indicates analysis not requested.

RESULTS OF ANALYSIS OF THREE RINSATE BLANKS COLLECTED AT WILLOW GROVE BETWEEN 1 AND 3 MAY 1989

Sample	Cyanide, Total (mg/L)	Total Petroleum Hydrocarbons (mg/L)	Total Organic Carbon (mg/L)	EA Number
Rinsate #1, 9SL	<0.01	<1.0	<10	2098
Rinsate #2, 9SL	<0.01	<1.0	<10	2099
Rinsate-1, FTA	(a)	<1.0	<10	2158

(a) Analysis cancelled on 8 May 1989.

B. Qualtiy Assurance Summary

B. QC Summary

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation NSLB-1, Composite

EA Number 8902087

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg) (dry)

Parameter	Method Sample results	detection limit	QC check std. Method blank	recovery (%)	Duplicate	Matrix spike recovery (%)
General organics						
Total petroleum hydrocarbons	58.6	1.0	<1	96.0/97.3	58.6	104.8
Inorganic nonmetals						
Cyanide, total	0.12	0.1	<0.1	94.8/95.5	0.12	43.1/43.1

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation NSLB-3, Composite

EA Number 8902091

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg) (dry)

Parameter	Method Sample results	detection limit	QC check std. Method blank	recovery (%)	Duplicate	Matrix spike recovery (%)
General organics						
Total organic carbon	7,300	10	----	91.3/96.5	5,700	----

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation NSLB-5, Composite

EA Number 8902095

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg) (dry)

Parameter	Method Sample results	detection limit	QC check std. Method blank	recovery (%)	Duplicate	Matrix spike recovery (%)
Inorganic nonmetals						
Cyanide, total	<0.12	0.1	<0.1	80.3/84.0	<0.12	78.3/61.9

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation NSLB-6, Composite

EA Number 8902097

Matrix: Liquid _____ (mg/L)

Soil X (mg/kg) (dry)

Parameter	Method Sample results	detection limit	QC check std. Method blank	recovery (%)	Duplicate	Matrix spike recovery (%)
Inorganic nonmetals						
Cyanide, total	<0.12	0.1	<0.1	80.3/84.0	<0.12	78.3/61.9

EA LABORATORIES QA/QC DATA FOR WET CHEMISTRY DATA

Project name: Willow Grove

Client sample designation Rinsate #1, 9SL

EA Number 8902098

Matrix: Liquid X (mg/L)

Soil _____ (mg/kg) (dry)

Parameter	Method Sample results	detection limit	QC check std. Method blank	recovery (%)	Duplicate	Matrix spike recovery (%)
In rganic nonmetals Cyanide, total	<0.01	0.01	<0.01	92.2/92.9	<0.01	----